

Regulation, Public Attitudes, and Private Governance

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Abstract:

Corporate adoption of politically contestable practices (e.g., transgender bathrooms; cage-free eggs) are increasingly common. In two studies, we empirically explore the relationship between corporate practices and subsequent public support for legislation mandating such practices. One hypothesis is that public support for new legislation decreases following corporate action because the private sector is perceived to be adequately managing the problem, thus obviating the need for a legislative response. A competing hypothesis is that public support for new legislation increases because people are prompted to recognize the issue in question as one in need of regulation. Our results suggest that announced changes to corporate practices can increase public support for legislation, but the effects differ depending on the political orientation of the perceiver. Legislators might fruitfully integrate corporate endorsements into public information efforts.

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In recent years, NGOs have turned away from focusing on public politics and public political institutions and devoted substantial resources to what is sometimes dubbed “private politics” or “private governance” (Abito, Besanko, and Diermeier 2014; Baron 2003; Egorov and Harstad 2015; Vandenberg 2013). In the private governance model of regulatory change, social activist NGOs target corporations that are either directly engaging in practices the activist NGOs find objectionable or that have supply chain sources engaging in such practices. Through some combination of threats, entreaties and collaboration or even ongoing partnership, the NGOs persuade the corporations to adopt voluntary, non-governmental, private self-regulation that entails limiting or even eliminating the practices (Baron 2016; Baron and Diermeier 2007; Hugill, Short, and Toffel 2016).

NGOs have had notable success in inducing corporations to engage in private governance. Issues in which private governance has played a major role include climate change, environmental safety risks (including nanotechnology), discrimination, working conditions (including wage levels), safety of employee or customers, endangered species protection, and animal welfare (Abito, Besanko, and Diermeier 2014; Light and Orts 2015). Fourteen percent of the world’s temperate rainforests and seven percent of global fisheries are governed by private certification systems that were adopted, at least in part, as a result of NGO activism (Vandenberg 2013). At the behest of NGOs, two of the largest and best-known U.S.-based multinational corporations, McDonalds and Walmart, have adopted a remarkably wide range of new internal rules and requirements for what they sell and how they conduct their businesses (Vandenberg 2006). Others have followed suit.

While there may be a number of reasons for NGOs to focus on private governance, one generally-cited reason in the United States is that federal legislative change is slow and arduous,

if not impossible. As Diermeier explains, “[m]any activists now believe that the ‘long march through the institutions’ takes too long and can be easily blocked” (Diermeier 2007); see also (Vandenbergh 2013).

As Thomas Lyon has noted, a great deal of work remains on empirical questions regarding the relationship between private governance and public politics (T. Lyon 2012). To the extent that scholars have addressed the effects of private governance on the likelihood of and nature of new public regulation, they have focused on the question of how private governance changes the lobbying efforts and practices of rational profit-maximizing corporations that engage in such governance, and the welfare effects that might follow (Egorov and Harstad 2015; T. Lyon 2012; T. P. Lyon and Maxwell 2008). Scholars have not addressed, or even raised, the question whether private governance might have an effect on the political economy of regulation by changing the preferences of portions of the electorate.

We begin with the premise that the current literature ignores possible effects of private governance on public politics because it focuses on presumptively liberal consumers and investors who are already sympathetic to NGO causes. In the standard account, it is this segment of the public that NGOs appeal to in campaigns to persuade corporations to engage in private governance, and it is this segment of the public that the corporations seek to appease or please in agreeing to private governance measures (Baron 2003). According to this conception, various liberal/progressive segments of the public become aware of a problem, they politicize it by attaching a label to the problem and starting a public discussion, and then they engage in private politics by demanding corporate change (T. P. Lyon and Maxwell 2008). But corporations also have moderate and conservative and apolitical customers and investors: there is no reason to think Walmart and McDonalds cater to demographic groups that are exclusively or even perhaps

predominantly self-identified as liberal. Because moderate and conservative customers and investors play no role in the standard account, scholars have not thought to ask whether private governance could influence the views of moderates and conservatives on issues such as climate change or animal welfare or labor conditions. Various dimensions of attitudes are subject to potential influence, including understandings of the facts being debated; affective attitudes toward such causes; openness to supporting new public regulation that would facilitate or serve the causes; and intentions to engage in consumer behavior consistent with the causes. If this is true, private governance ultimately may play a role in reducing polarization in the population regarding such issues as animal welfare, climate change and labor conditions.

Why might private governance influence moderate and conservative audiences, such as consumers who come into contact with private governance actions undertaken by consumer-facing companies? Shared ideology or world-view can influence the extent to which a person credits the information and views being expressed through actions. Sources of information are perceived as more credible to the extent that they are perceived as being more trustworthy and/or having more expertise (Sternthal, Phillips, and Dholakia 1978). Source credibility can influence the extent to which a person perceives the message as worthy of attention and also the extent to which the message is persuasive (Renn and Levine 1991).

In considering the possible effects of private governance on consumers' views about issues that public interest groups have traditionally worked to address, we start with the observation that some Americans trust markets and corporations more than others (Pew Research Center 2013). There is nuance revealed by extensive polling: different sub-groups among what pollsters label as "conservatives" have more faith in "business" than others, and some sub-groups

are much more comfortable with small business than large corporations or “Wall Street” (Pew Research Center 2014).

When the listener perceives the messenger as legitimate and authoritative, the listener is more likely to take notice and change his or her views based on what the messenger communicated (Aronson, Turner, and Carlsmith 1963; Kahan 2010). Individuals who have more trust in markets might be more open to being influenced by actions taken by market actors such as corporations, as opposed to actions taken by government actors or non-profit organizations (Pew Research Center, 2013, 2014). Actions taken by corporations with especially conservative reputations – reputations of not being “politically correct,” of not being influenced by liberal NGOs and activists – might be particularly influential with conservative audiences (Briscoe and Safford 2008).

In the context of the causes that have been the focus of NGO campaigns – climate change, animal welfare, use of antibiotics and pesticides in food production, to name only some – there is often a factual dispute between NGOs and activists on the one hand and industry groups on the other. Sometimes the question is whether there is a “real” problem warranting public concern or whether the problem is just illusory – whether liberals have invented a problem to fix where there is none. There is also often a factual dispute over whether the changes the NGOs themselves propose would have adverse effects on public welfare, and especially on the economy. Liberal NGOs and some industry groups disagree on a range of purely factual questions: Does climate change exist or not, and if so, how big a problem is it? Do animals suffer in factory farm production or are they well-treated? Is factory production unnecessary or necessary for safe food to be available to consumers at reasonable prices? These factual disputes

typically (although not always) run along ideological boundaries with liberals and conservatives defaulting to polar positions regarding what is factually true (Kahan 2016).

As major market actors, corporations may have persuasive power when they embrace a factual account regarding one of these issues and take voluntary action consistent with that factual account. And even apart from the question of particular factual disputes, corporate embrace of the position that a certain activity is unacceptable may lead consumers to embrace those stances. For Americans who believe that “government should run like business,” a corporation’s adoption of a practice in and of itself may be legitimating (Gangl 2007). These predictions presume, however, that the relevant audiences view the private governance as a sincere choice on the part of the corporation, rather than an action coerced by and hence attributable to liberal activists.

We hypothesize that private governance could influence moderate and conservative audiences’ support for new public regulation in two, fundamentally inconsistent ways. If McDonalds announces that it is discontinuing use of eggs from caged chickens because cages cause suffering and cage free eggs are safe and affordable, or Chipotle discontinues using GMO foods because of health and environmental concerns, consumers may take McDonalds’ and Chipotle’s actions as justifying and legitimating regulatory efforts to curb caged egg production or GMO food production. Conversely, consumers may reason that although cage free eggs or GMO-free foods are a good idea, the private sector (as shown by McDonalds and Chipotle) is already addressing the relevant problems and government regulation is thus not needed (Vandenbergh and Gilligan 2015).

Private governance also might have an effect on its audience’s willingness to change their personal behaviors in their private life. With respect to consumer behavior, factors like

convenience, monetary cost of the goods and services in question, and other real world exigencies would seem to play a larger role than concerns regarding being “green” or otherwise socially and ethically responsible (Norwood and Lusk 2011). However, to the extent that private governance changes conservatives’ and moderates’ factual understandings of and attitudes toward certain issues that implicate buying decisions, it also may change consumer choices on the margins (Stolle, Hooghe, and Micheletti 2005).

Because many liberals presumptively start with a bias toward believing, for example, that climate change is real and necessitates regulation or that caged animal production is cruel and should be banned, we would predict that private governance related to climate change, animal welfare or other causes would have much less of an impact on liberals than it does on moderates or conservatives. At the same time, we would hypothesize that, by reinforcing their priors, private governance might have some effect on the factual understandings, attitudes, support for regulation and aspirational consumer behavior of liberals.

In the same way that private governance may be a particularly powerful messenger for conservatives, government action, particularly by stereotypically liberal governments, may be a particularly powerful messenger for liberals. By contrast, government messaging might have very little impact on conservatives, as they may perceive a liberal government as a delegitimizing messenger for the cause at issue.

Food Production and Private Governance

The influence of private governance on attitudes might vary by the type of “cause” or reform at issue, the nature of the corporation or business engaging in private governance and its reputation, and perhaps by the way the private governance is framed or communicated. It may well be that private governance has lesser effects for issues that are intensely polarized along a

liberal-conservative spectrum, as opposed to less polarized issues. So, too, private governance may have more impact with regard to issues for which the relevant audiences begin with relatively little background information.

A wide range of studies will be necessary to explore the relationship between private governance and political identity. This is a new, unexplored area of study and, by necessity, we are beginning on a clean slate. In this paper, report two studies regarding private governance and food production, which serve as a good starting point for this exploration. Food is salient to all people; everyone eats. Almost everyone is familiar with the idea of government regulation regarding food, and almost everyone makes decisions as a food consumer many times every day (Wansink and Sobal 2007). Moreover, food has been the core of certain NGO campaigns and is the subject of extensive private governance efforts by corporations that serve millions of customers, such as McDonalds and Walmart.

The case of McDonalds' voluntary embrace of a policy to source only cage free eggs serves as the basis for our first study. McDonalds has neither a particularly liberal nor conservative reputation as a corporation, so it may be representative of the generic major corporation in Americans' consciousness. The question of farm animal welfare is a politically polarized one, with conservatives expressing less concern with farm animal welfare than liberals (Deemer and Lobao 2011; McKendree, Cronney, and Widmar 2014). The Humane Society has pushed for federal regulation of conditions on poultry and other factory farms, but it has not been successful and has now emphasized private governance – pushing, cajoling, and working with restaurant chain companies, supermarket companies and the like to convince them to adopt cage free egg policies (Valero and Rhee 2012). McDonalds' stance on cage free eggs is also a good test case because there is a relatively straightforward change individual consumers can aspire to

take if they become more convinced that battery cage egg production is problematic – a switch to cage free eggs, at least if those eggs are available within their price/budgetary constraints.

Our second study involves Walmart’s embrace of a policy of gradual elimination from its stores of meat raised using antibiotics. Like McDonalds, Walmart is a familiar corporation. Discussions of the antibiotics issue have been “highly polarized” (Landers et al. 2012). NGOs have waged a long and somewhat successful effort to convince corporations to adopt no-antibiotics policies (Human Society of the United States, n.d.). And as with eggs, consumers readily could change, or aspire to change, their buying habits to exclude meat raised with antibiotics.

Study 1: Cage Free Eggs, Political Orientation, and Private Governance

Consumers and NGOs are increasingly putting pressure on companies to change the conditions under which egg-laying hens are frequently housed: packed tightly in cages too small to spread their wings. In these “battery cage” systems, rows of cages are connected together sharing common divider walls. NGO efforts to lobby for legislation to regulate battery cages have been largely unsuccessful, with one important exception: in 2010 the California state legislature mandated that by 2015 all shelled eggs sold in California must be from hens that are raised in conditions that permit them to fully extend their wings, stand up, lie down, and turn around. Many restaurant chains and other food businesses have promised voluntarily to switch to cage-free eggs in the future.

Study 1 was designed to explore two questions: first, whether private v. public governance regarding cage free eggs has differential effects on the attitudes of ideological conservatives and liberals; and second, whether governance efforts produce more favorable attitudes toward the issue of government regulation of egg production.

Methodology and Participants

We recruited 529 participants from a national sample via contract with Survey Sampling International³ to complete an online study. Responses from 62 participants were excluded because they failed an attention check, for a total of 467 participants. The supporting information reports demographic information for samples in both studies.

Participants were randomly assigned to one of three conditions: “No Governance”, “Private Governance” and “Public Governance.” Participants in all three groups read a description of battery cage and cage-free methods of producing eggs. The description presented information on egg production that included arguments in favor of battery cage methods as well as arguments in favor of cage-free methods.

After reading the description of positions, participants in the No Governance group were directed to the questions described below. Participants in the Private Governance and Public Governance groups read additional information about cage free eggs. In the Private Governance group, participants read a news story reporting that McDonald’s has recently announced that its eggs will be produced cage-free within ten years, based on McDonald’s concern for improving the treatment of animals. This announcement was based on the actual statement released by McDonald’s. In the Public Governance group, participants read parallel information that the state of California had recently announced that all eggs served in state facilities (such as schools) will be produced cage-free within ten years, based on the state’s concern with improving the treatment of animals. This language was identical to the language in the Private Governance

³ Survey Sampling International uses targeted recruitment to construct a panel of respondents that closely matches U.S. Census benchmarks for education, age, gender, geography, and income.

condition, the only difference being that “McDonald’s” was replaced with “California”. The supporting information contains contains the text of these materials.

Cage Free Eggs Attitudes

We measured participants’ attitudes about various aspects of cage-free eggs. All responses were on a five-point scale (1: Strongly Disagree; 5: Strongly agree). Questions were presented in random order. We included two items on attitudes toward the issue and one on general animal welfare, perceived threat to human welfare, planned consumer behavior, and willingness to accept government regulation. The supporting information reports all question wording for both studies.

Political Ideology and Control Variables

Participants indicated their political orientation on a 7-point scale from very liberal to very conservative. The political orientation measure revealed that there was a broad distribution of participants across the political spectrum. Frequencies are reported in the supporting information. Participants also indicated the state in which they currently reside, and how many times per week, on average, they eat food from McDonald’s.

Hypotheses

We expected that in the No Governance (Debate only) condition, compared to liberals, political conservatives would perceive less of a problem with cage free eggs, would not be very interested in purchasing them, and would be less inclined to support government regulation on the issue. We hypothesized that in the Public Governance condition, the State of California announcement indicating that it would source cage free eggs would not change the attitudes of either liberals or conservatives. By contrast, we expected that compared to the No Governance

(Debate only) condition, political conservatives in the Private Governance (McDonald's) condition would adopt more positive attitudes about cage free eggs and be more willing to support government regulation to ensure their production. We expected no such difference for political liberals.

Results

Descriptive statistics for questionnaire items are reported in the supporting information. We were most interested in examining whether governance condition differentially influenced participants depending on their political orientation. Using linear regression, we examined the relationship between Governance Type and participants' attitudes about cage-free eggs, controlling for political orientation, the frequency of eating at McDonald's and whether or not the participant resides in California. The regression results are depicted in Table 1. To begin, we examined the extent to which participants agreed that the government should restrict the use of battery cage egg production. Overall, and not surprisingly, conservatives were more opposed to government regulation of battery cage egg production than liberals. But conservatives who learned that McDonald's had announced that it would stop sourcing battery cage produced eggs were notably more supportive of government regulation than their conservative counterparts in other Governance conditions. Indeed, the conservatives who learned about McDonald's private governance measures were about as supportive of government regulation regarding egg production as were liberals. This pattern of predicted means is illustrated in Figure 1.

TABLE 1 Governance Type and Political Orientation Predict Attitudes About Battery Cage Egg Production

<i>Predictors</i>	<i>Dependent Measures</i>					
	<i>Govt</i>	<i>Disturb</i>	<i>Better</i>	<i>Price</i>	<i>Safe</i>	<i>Welfare</i>
Governance Type						
Debate	(base)					
McDonalds	-0.539 (.375)	-0.360 (.378)	-0.438 (.293)	-0.473 (.292)	-0.332 (.338)	-0.165 (.302)
State of CA	-0.014 (.376)	-0.465 (.380)	0.029 (.295)	-0.028 (.294)	-0.015 (.339)	-0.330 (.304)
Polit. Orient.	-0.276** (.061)	-0.186** (.062)	0.087 (.048)	-0.066 (.048)	-0.029 (.055)	-0.107* (.050)
Gov Type x Pol Orient.						
McDonalds	0.235** (.085)	0.179* (.086)	0.119 (.066)	0.113 (.066)	0.073 (.077)	0.094 (.069)
State of CA	0.067 (.089)	0.141 (.090)	-0.008 (.070)	0.016 (.070)	-0.017 (.081)	0.100 (.072)
Covariates						
Eat McD's	0.016 (.036)	-0.056 (.036)	0.014 (.028)	0.001 (.028)	-0.010 (.032)	0.024 (.029)
Cal. Res.	-0.102 (.178)	0.079 (.180)	0.090 (.139)	0.152 (.139)	0.009 (.161)	0.179 (.144)
Constant	4.513** (.267)	4.420** (.270)	4.544** (.210)	4.611** (.209)	4.221** (.241)	4.567** (.216)
Observation	444	444	444	444	443	444

Notes: Standard errors in parentheses. *p<0.05; **p<.01

Disturb: Battery cage egg production disturbs me.

Better: Cage free egg production is better for animal welfare than battery cage egg production.

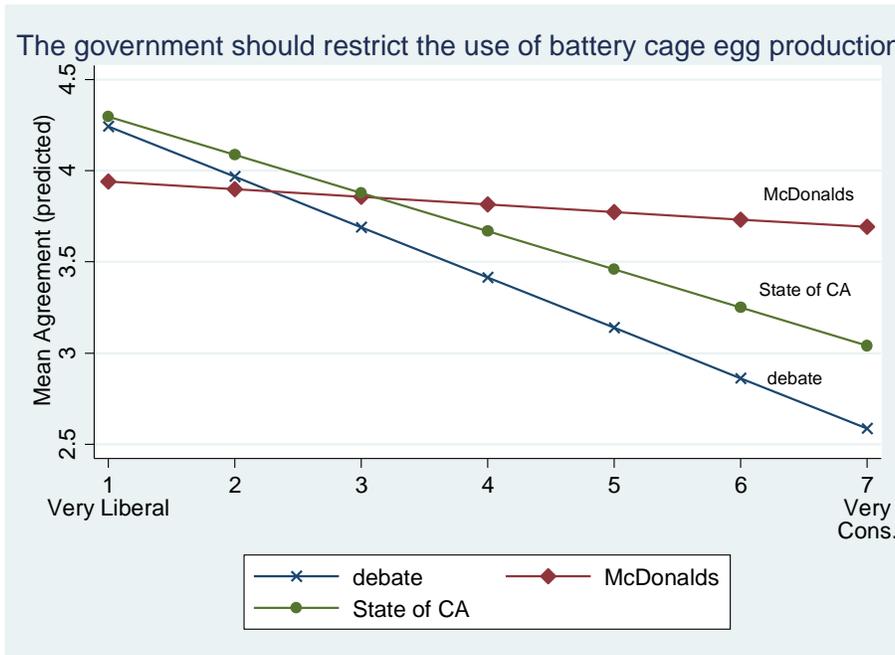
Price: If the price was the same, I would prefer to eat cage free eggs than battery cage eggs.

Govt: The government should restrict the use of battery cage egg production.

Safe: Cage free eggs are as safe to eat as eggs produced using battery cages.

Welfare: The welfare of farm animals matters to me.

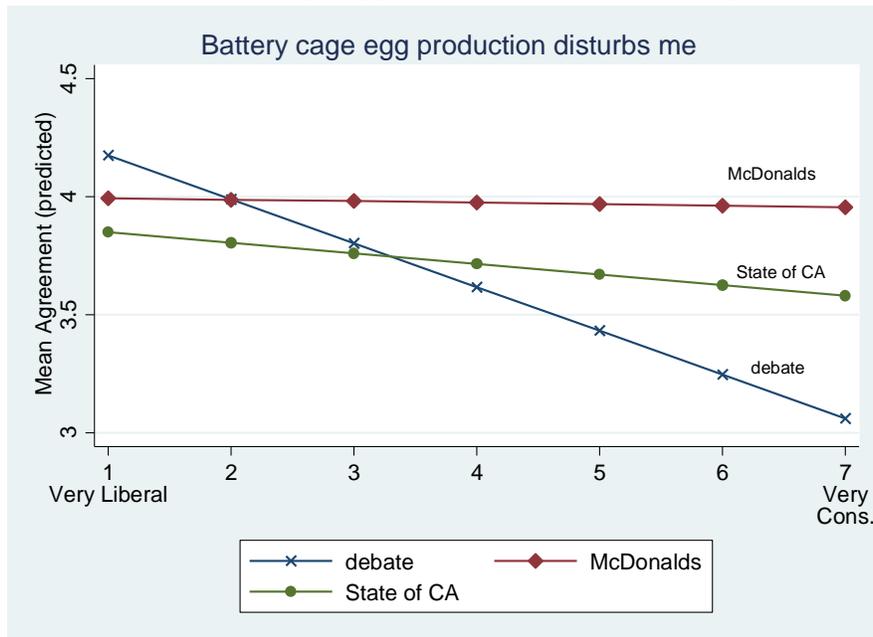
FIGURE 1 Endorsement of Government Regulation to Restrict Battery Cage Egg Production



Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 1.

In general, and not surprisingly, conservatives reported being less disturbed than liberals about battery cage egg production. However, conservatives who learned that McDonald’s would source cage-free eggs reported being equally disturbed as liberals regarding battery cage egg production, even though they were less disturbed than liberals in the absence of public or private governance (the Debate condition). For liberals, on the other hand, we observed no statistically significant influence of Governance condition. When the announcement originated from the State of California, the influence on conservatives was less than from McDonald’s. Figure 2 depicts the predicted mean ratings of the “disturbed” measure at each level of political orientation, broken out by governance condition.

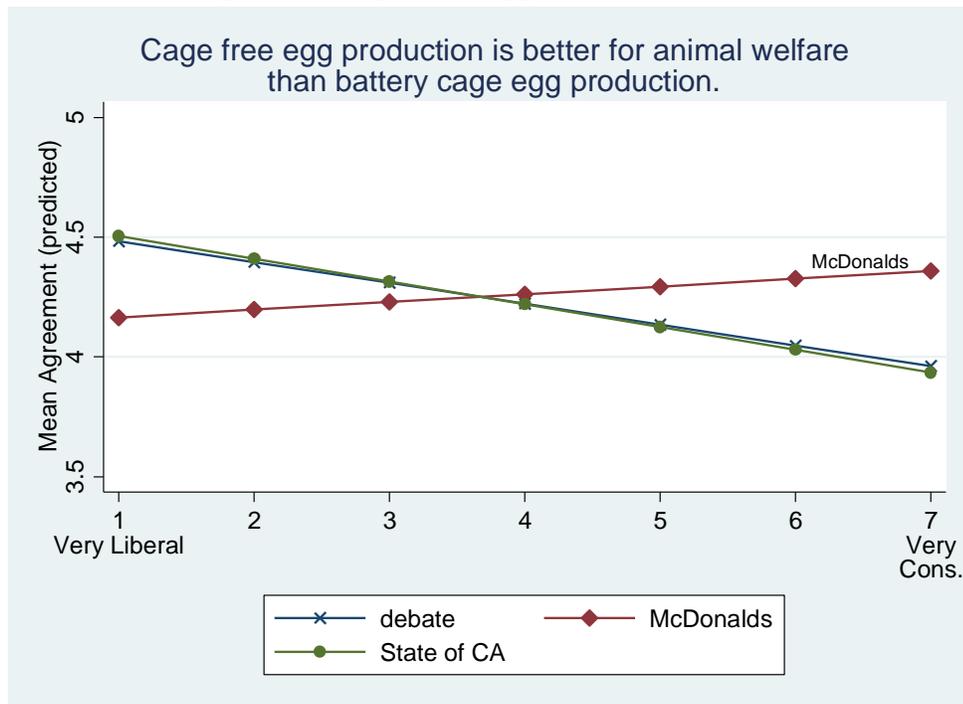
FIGURE 2 Battery Cage Egg Production as Disturbing



Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 1.

In addition to measuring how disturbed participants felt by battery egg production, we asked the extent to which they thought that cage free egg production is better for animal welfare. Here too, the pattern of the Governance x Political Ideology interaction suggests that the McDonald's announcement affected conservatives' attitudes more positively than liberals' but the test statistic did not reach conventional levels of statistical significance ($p=.074$). See Figure 3.

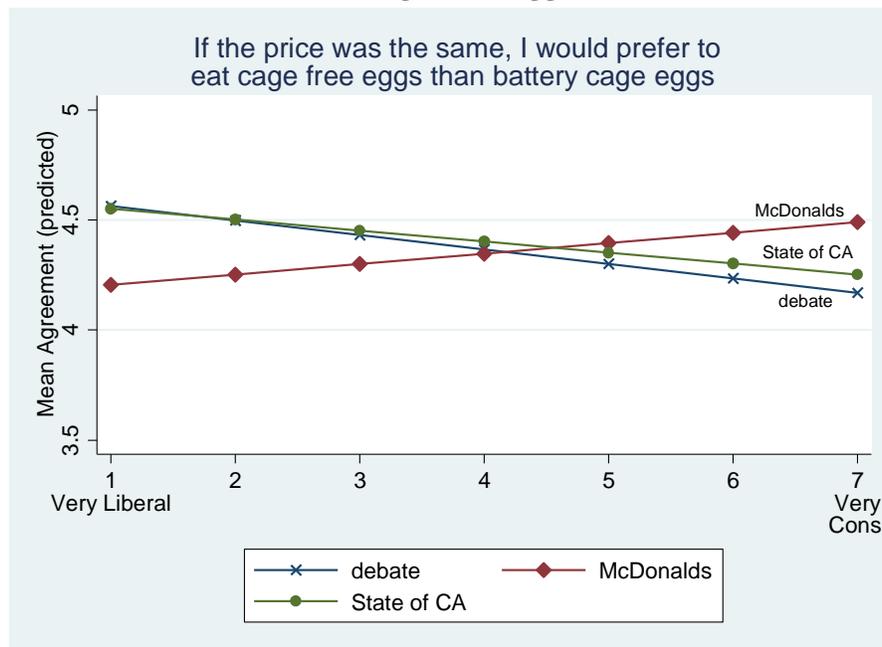
FIGURE 3 Perception of Cage Free Eggs as Better for Animal Welfare



Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 1.

Figure 4 shows that exposure to the McDonald's announcement had a more positive influence on conservatives' preferences than liberals', but this Governance x Political Ideology interaction did not reach conventional levels of statistical significance ($p=.088$). Finally, the items measuring attitudes about egg safety and the personal importance of animal welfare did not display the pattern of interaction seen in the other measures.

FIGURE 4 Preference for Cage Free Eggs



Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 1.

Discussion

The results of Study 1 suggest that private governance can influence the perceived urgency of issues that might otherwise be viewed with skepticism or indifference. In this study, McDonalds' announcement about sourcing only cage free eggs had a consistently more positive effect on conservatives than liberals. Compared to conservatives in the No Governance condition (who only read the debate information), conservatives in the Private Governance (McDonald's) condition became more disturbed by battery cage production and more willing to consider the possibility that government regulation might be necessary to effect changes in egg production practices. In fact, conservatives who read the McDonald's announcement were just as disturbed and willing to support government regulation of egg production as liberals were; this was not true for conservatives in the Public Governance condition who read the State of California announcement or in the No Governance condition who read no announcement. Interestingly,

however, the pattern of results in the Public Governance condition fell somewhere in between the No Governance and Private Governance groups. That is, action on the part of the State of California to source cage-free eggs had a smaller influence on the willingness of moderates and conservatives to consider supporting government regulation of egg production.

The results of Study 1 suggest that private governance might have the capacity to influence public attitudes about public health and welfare issues, as well as the desirability of government regulation. Because of the dearth of existing research on these questions, it is unclear whether the effects we observed would extend to similar issues, and to other sources of private governance. To begin to explore this question, we designed an study similar to Study 1, but this time on the question of antibiotic administration to livestock.

Study 2: Routine Antibiotic Administration to Livestock

Over the past fifty years, as animal farms in the United States became more concentrated and industrialized, farmers introduced the practice of routinely administering antibiotics to healthy animals in feed and water to prevent disease in crowded conditions, and sometimes also to promote growth. As a result of these practices, some bacteria become resistant to antibiotics, allowing those bacteria to survive and proliferate, and even share resistance genes with other bacteria. Livestock industry purchasing accounts for about 70% of sales of antibiotics important for human medicine in the U.S. The CDC estimates that 23,000 people die each year from antibiotic-resistant bacterial infections, and the agency attributes some of these to antibiotic use in livestock (“Antibiotic Resistance | NARMS | CDC” 2017). In Study 2 we examined whether private governance of antibiotic use in livestock would influence public attitudes about the issue and willingness to consider government regulation to address it.

Methodology and Participants

We recruited 614 participants from Survey Sampling International to complete an online study. Responses from 57 participants were excluded because they failed one or more attention checks, leaving 557 participants.

As in Study 1, participants were randomly assigned to one of three conditions: “No Governance”, “Private Governance” and “Public Governance.” Participants in all three groups read a description of the practice of routine administration of antibiotics to livestock in the U.S. The description presented information about advantages of routine antibiotic administration (e.g., promoting rapid growth, preventing disease in crowded conditions), as well as one serious risk associated with this practice (exacerbating the problem of drug-resistant superbugs that threaten human health). After reading the description of positions, participants in the No Governance group were directed to the questions described below. In the Private Governance group, participants read a news story reporting that Walmart has recently announced that over the next few years it will transition to stocking its stores only with meat produced without antibiotics, based on increased risk to human health and animal suffering. In the Public Governance group, participants read parallel information that New York City had recently announced that over the next few years it will transition to sourcing only meat (for schools and other city facilities) produced without antibiotics. This language was identical to the language in the Private Governance condition, the only difference being that “McDonald’s” was replaced with “New York City”. The supporting information contains the full text of these materials.

Antibiotics Attitudes

We measured participants' attitudes about various aspects of antibiotic administration to livestock on a five-point scale (1: Strongly Disagree; 5: Strongly agree). Questions were presented in random order. The questions were similar to those in Study 1, and are reported in the supporting information.

Political Ideology and Control Variables

We examined two aspects of political orientation in this study in an attempt to tease out whether the patterns observed in the first study were more attributable to the social or to the economic aspect of political ideology. In the end, there were no meaningful differences across these two measures and their interaction with Governance Type. Because the social political orientation and the economic political orientation measures were highly correlated ($\alpha = .91$), we combined them into a single measure. The distributions and questions are contained in the supporting information. Participants also indicated the state in which they currently reside, and how often they eat meat.

Results

Descriptive statistics for attitude items are reported in the supporting information. Using linear regression, we examined the relationship between Governance Type and participants' attitudes about routine administration of antibiotics to livestock, controlling for political orientation.⁴ Across six attitudinal measures, participants' reaction to the idea of administering antibiotics to livestock depended on an interaction between their political orientation and the Governance condition to which they had been assigned. In general, the results are parallel to the

⁴ In supplemental analyses, we also controlled for participants' frequency of meat eating and state of residence, and found that these controls yielded the same pattern of results as the model without these controls.

findings in Study 1: political conservatives were influenced by Governance condition in a way that political liberals were not. The regression results are depicted in Table 2 and discussed in more detail below.

TABLE 2 Governance Type and Political Orientation Predict Attitudes About Antibiotic Administration to Livestock

<i>Predictors</i>	<i>Dependent Measures</i>						
	<i>Ban</i>	<i>Threat</i>	<i>Ownerjudge</i>	<i>Disturb</i>	<i>Price</i>	<i>Accept</i>	<i>WTP</i>
Governance Type							
Debate	(base)						
Walmart	0.572* (0.286)	0.409 (0.263)	-0.611 (0.338)	0.444 (0.292)	0.429* (0.215)	-0.365 (0.319)	8.829 (10.33)
New York City	1.201** (0.292)	1.100** (0.266)	-1.242** (0.342)	1.120** (0.296)	0.573** (0.218)	-0.600 (0.323)	16.02 (10.46)
Polit. Orient.	-0.0518 (0.0453)	-0.0157 (0.0416)	0.0828 (0.0535)	-0.0611 (0.0462)	0.0221 (0.0341)	0.0936 (0.0505)	0.0848 (1.636)
Gov Type x Pol Orient.							
Walmart	-0.0421 (0.0628)	-0.0417 (0.0577)	0.0866 (0.0742)	-0.0300 (0.0641)	-0.0565 (0.0472)	0.00618 (0.0700)	-1.416 (2.267)
New York City	-0.193** (0.0652)	-0.206** (0.0598)	0.238** (0.0766)	-0.184** (0.0662)	-0.108* (0.0488)	0.0859 (0.0726)	-3.001 (2.342)
Constant	3.946** (0.201)	4.091** (0.184)	2.119** (0.237)	4.133** (0.205)	4.383** (0.151)	1.968** (0.224)	38.14** (7.244)
Observations	555	556	557	557	557	555	557

Notes: Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$

Ban: Combined Measure: Would you oppose or support a law banning the routine use of antibiotics in livestock production? and The federal government should ban the routine use of antibiotics in livestock production.

Threat: Giving routine antibiotics to livestock is a threat to human health.

Ownerjudge: The question of whether to use routine antibiotics in livestock production should be left to the judgment of the owner of the livestock facility.

Disturb: The routine use of antibiotics in livestock production disturbs me.

Price: If the price was the same, I would prefer to buy meat produced without antibiotics.

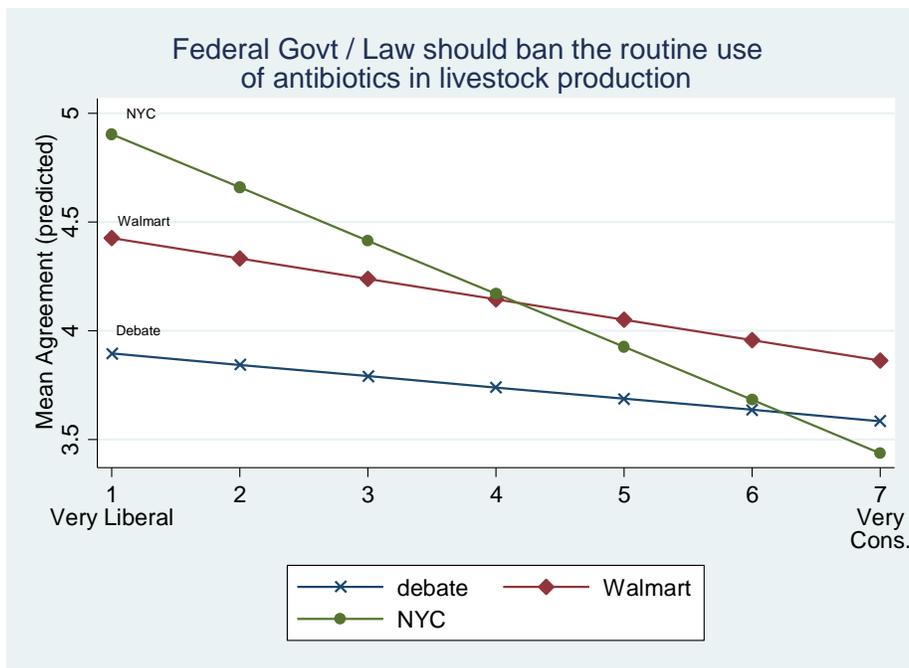
Accept: Giving routine antibiotics to livestock is an acceptable practice.

WTP: How much more money would you be willing to pay in the grocery store for a one-pound package of bacon certified to be produced without the use of antibiotics?

We examined the extent to which participants agreed that the government should restrict the use of antibiotics in livestock production. Liberals were generally supportive of government

regulation in this area, and liberals who learned that either Walmart or New York City would stop sourcing meat produced with antibiotics were even more supportive than liberals in the debate condition. The effect of New York City announcing that it would be sourcing only antibiotic-free meat had a much different effect on conservatives than on liberals: conservatives in the public governance (New York City) condition were less supportive of government regulation than their liberal counterparts. At the same time, Walmart’s announcement had the same effect on liberals as conservatives – causing both groups to be more supportive of government regulation than they were in the debate condition. This is illustrated in Figure 5.

FIGURE 5 Endorsement of Government Regulation of Antibiotic Administration to Livestock

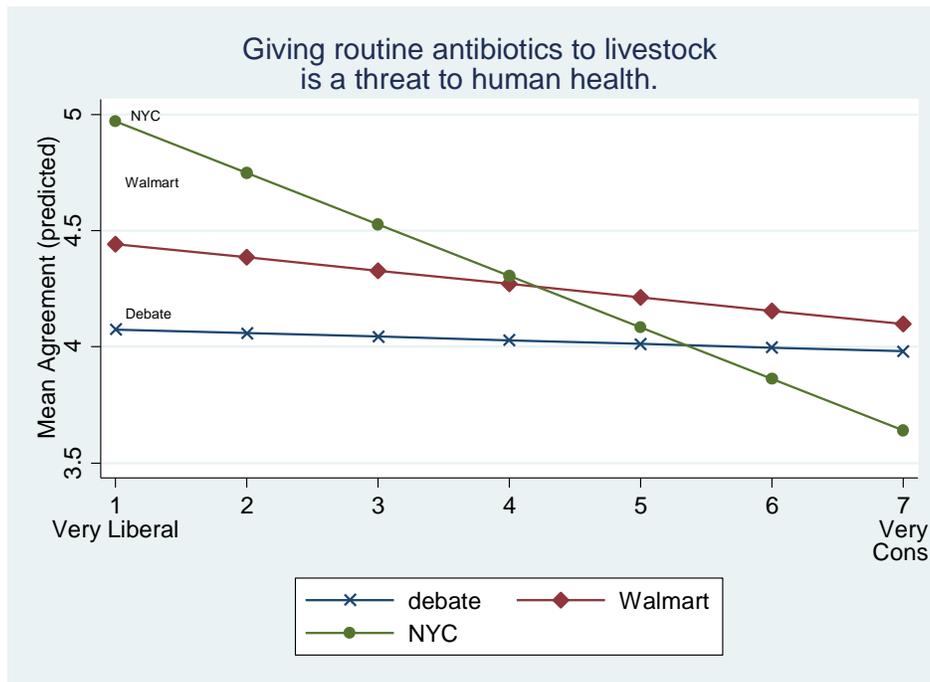


Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 2.

With respect to the extent to which participants viewed the use of antibiotics in livestock production as a threat to human health, agreement again depended on an interaction between governance condition and political orientation. For liberals, the perceived threat was fairly high

in the debate condition, and learning that either Walmart or New York City will source only antibiotic-free meat increased this perceived threat. For conservatives, Walmart’s announcement had little effect on perceived threat. While New York City’s announcement increased liberals’ perception of threat to human health, for conservatives it worked in the opposite direction, trending toward decreasing the perception of the threat. This pattern is illustrated in Figure 6.

FIGURE 6 Perception of Threat to Human Health from Administration of Antibiotics to Livestock

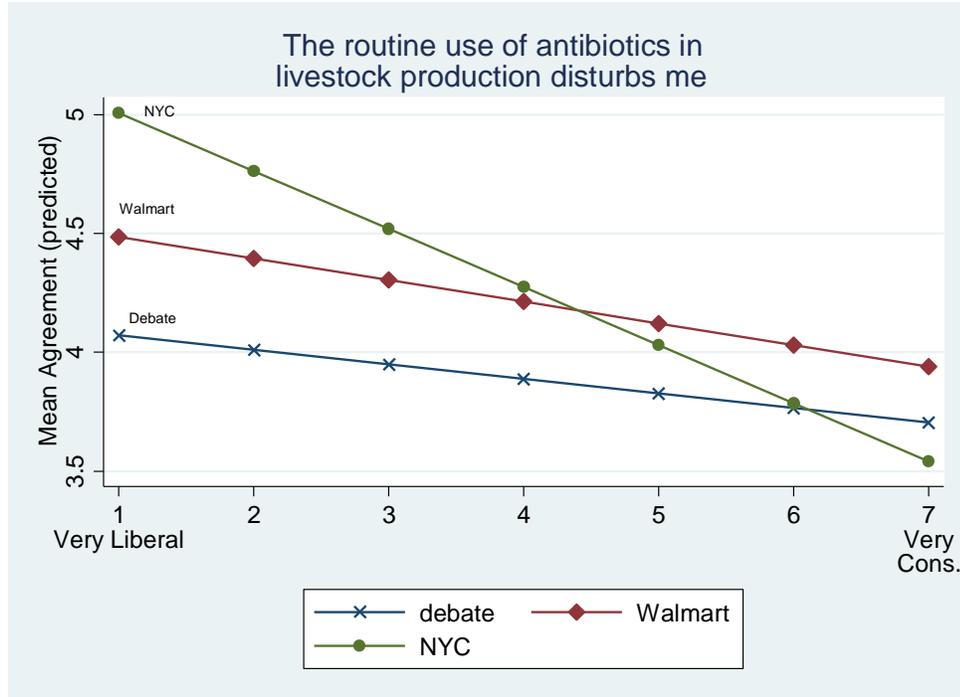


Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 2.

For the item “The routine use of antibiotics in livestock production disturbs me” (Figure 7), liberals were positively influenced by both Walmart’s and New York City’s announcement, while conservatives were relatively unaffected by either. Agreement with the item “The question of whether to use routine antibiotics in livestock production should be left to the judgment of the owner of the livestock facility” displayed a mirror image of the now-familiar pattern (because it was endorsed more by conservatives than liberals overall). Thus, compared to the debate

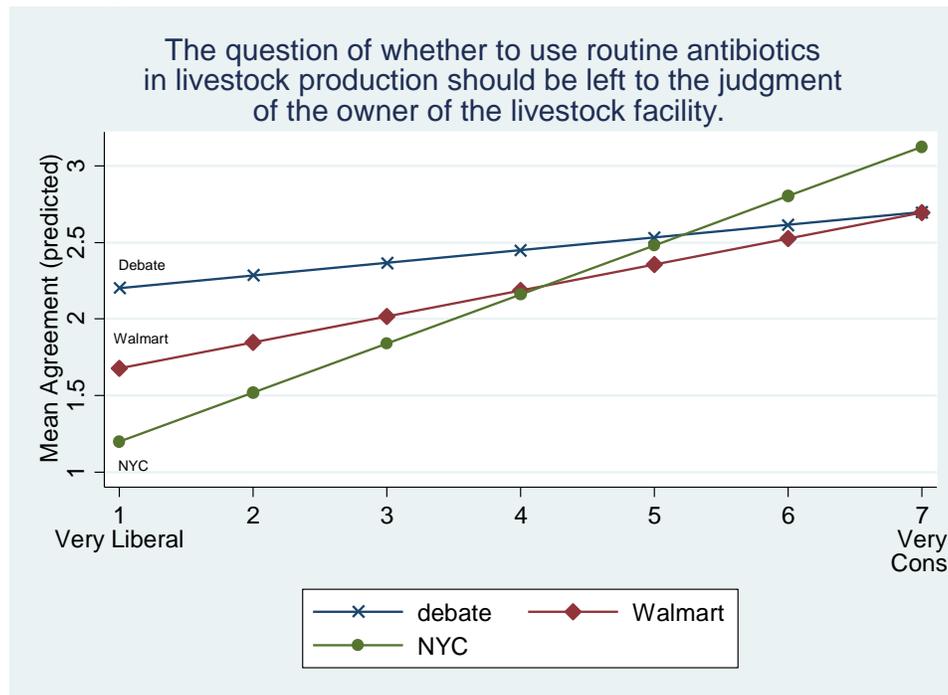
condition, liberals in the Walmart condition disagreed with this more when Walmart announced sourcing antibiotic-free meat, and even more when New York City did so. Conservatives, by contrast, endorsed this proposition more than liberals, with a trend toward amplifying this effect when New York City announced sourcing antibiotic-free meat. This is illustrated in Figure 8.

FIGURE 7 Administration of Antibiotics to Livestock as Disturbing



Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 2.

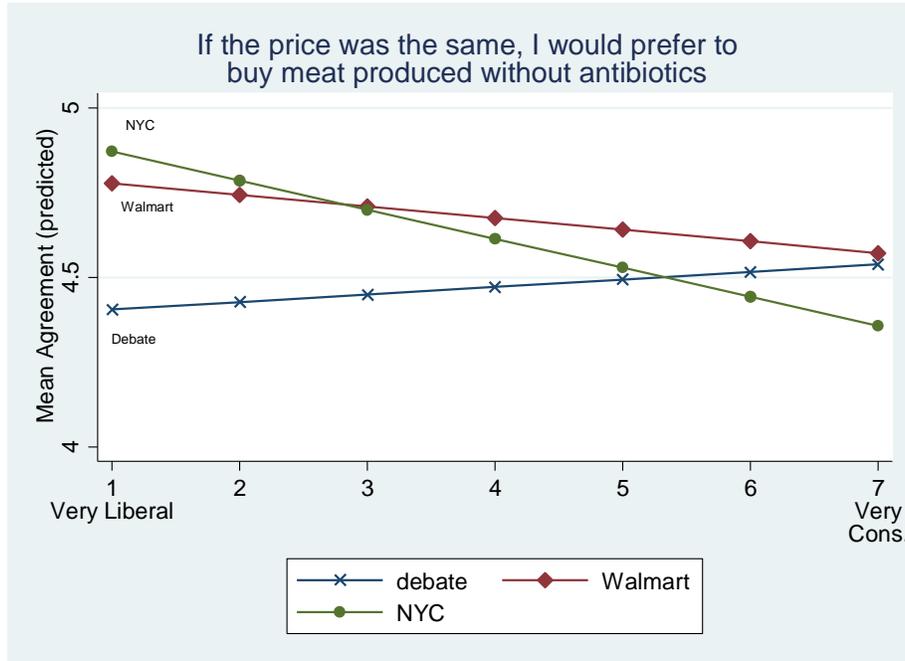
FIGURE 8 Administration of Antibiotics to Livestock Should Be Left to Judgment of Owner



Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 2.

Of the two consumer behavior measures one (willingness to pay for antibiotic-free bacon) yielded no differences across variables. The other (“If the price was the same, I would prefer to buy meat produced without antibiotics”) yielded a familiar pattern: in general, participants had a more favorable attitude toward purchasing antibiotic-free meat after reading Walmart’s or New York City’s announcement (Figure 9). At the same time, extreme conservatives were *less* likely to intend to purchase antibiotic-free meat following the New York City announcement, and were uninfluenced by Walmart’s announcement. Finally, the item measuring acceptability of the practice of administering antibiotics to livestock) all showed no statistically significant main effects or interaction between political orientation and governance type.

FIGURE 9 Preference for Antibiotic-Free Meat



Note: Predicted mean agreement, at each level of political orientation, by Governance condition, Study 2.

Discussion

In Study 2 we found additional support for the notion that private governance measures can increase support for government regulation of health and welfare risks. Specifically, an announcement by Walmart about the risks of antibiotic use in meat and poultry along with a commitment to sell only antibiotic-free products increases consumers’ willingness to support government regulation on this issue. The Walmart announcement increased support for a ban on routine antibiotic use in livestock among liberals and conservatives alike. Thus, conservatives’ general hesitation about endorsing the need for new legislation was eased somewhat by Walmart’s apparent concern about this issue. However, unlike in Study 1, the private governance effects on conservatives were not statistically different from liberals.

The New York City initiative on antibiotics apparently had no influence on conservatives' support for legislation, and trended toward a negative effect on their underlying attitudes about the issue. For example, conservatives who learned that New York City would source only antibiotic-free meat reported perceiving antibiotics as less of a threat to human health than conservatives in the control group who heard only the debate. This pattern differs from conservatives in Study 1 who, if anything, were more likely to be positively influenced by the California announcement about cage free eggs – conservatives in that group became slightly more inclined to be concerned about the problem, although not as much as conservatives exposed to the McDonald's announcement.

Liberals were influenced by both the private and public governance announcements. Liberals who read the Walmart announcement were more likely to support new legislation, they perceived antibiotic use in livestock as more of a threat, and they were less inclined to leave the decision to the judgment of the livestock owner, compared to liberals in the control condition. This pattern was amplified for liberals who read the New York City announcement. For liberals, New York City was even more influential source than Walmart in prompting liberals to perceive animal antibiotics as a problem, and to endorse government action to address it.

Conservative participants seemed to view the policy actions of New York City with particular suspicion, which may explain why the New York City announcement made them more skeptical that there exists a problem to be addressed. Indeed, while the results of Study 2 are generally consistent with the conclusion from Study 1 that private governance boosts conservative support for regulation, the clearest result in Study 2 is that, for conservatives, private governance may be much more effective as a tool of messaging than public governance, at least where that public governance is associated with a "liberal" government.

At the end of the study we invited participants to tell us if they had any comments about the study. A total of 80 conservatives (self-identified as 5 or above on the political orientation measure) had been randomly assigned to the New York City condition. Most did not make any substantive comment (either none or just “thank you”). Of the eight conservative participants in the New York City group who made a substantive comment, five of them expressed suspicion about the liberal motives of decision makers in New York City (e.g., “I feel that whatever NYC does anymore is suspect...”) and a few even suggested that the survey itself endorsed a biased perspective because it involved presentation of a policy of New York City (e.g., “The survey seemed leading to support a liberal opinion...New York...a strongly liberal city and state...”). A few of the participants who indicated they were politically in the middle (endorsing a 4 on the political orientation measure) also remarked that New York City is run by liberals and therefore its policies are not to be trusted. By contrast, no self-identified liberals questioned the motive of New York City, Walmart, or the survey itself. And no conservatives questioned the motives of Walmart. The only participants who commented on the bias of the survey were non-liberals in the New York City group. This suggests that for some conservatives, the credibility of the source of the announcement was influenced by the motives of the decision makers behind the source. For these conservatives, New York City is run by liberals whose motives are not to be trusted. Presumably, the same is not so for Walmart.

In Study 2, the pattern of results indicates that liberals perceived Walmart as a credible source of information, adjusting their attitudes to be more concerned about the problem of animal antibiotics in the Private Governance condition (Walmart announcement) than in the Control condition (debate only). This stands in contrast to the pattern of results in Study 1, where liberals evaluating cage free eggs were almost completely unaffected by either Private

Governance (McDonald's) or Public Governance (California). This difference between Study 1 and Study 2 might be attributable to the salience of the respective issues involved. California's ballot measure regulating cage size for egg-laying hens has received a great deal of press since it was passed in 2008. Since that time, several other states also have prohibited battery cages for egg-laying hens. For various reasons, legal efforts to reform practices surrounding administration of antibiotics to livestock have taken the form of negotiations between the FDA and regulated industries, which tend to receive less coverage in the popular press. As a result, liberals in Study 1 might already have been quite familiar with the issue of cage free eggs, and so there was less opportunity for information about private governance by McDonald's or public governance by California to increase their concern about the issue. By contrast, relative to Study 1, liberals in Study 2 were more influenced by private (Walmart) and public (New York City) governance initiatives regarding antibiotics, perhaps because the efforts to reform those practices are somewhat more recent and also less salient.

Implications, Limitations, and Future Directions

Overall, we found that private governance did influence attitudes about the issue at hand and support for public legislation. Most notably, learning about McDonalds' and Walmart's private governance made conservatives more likely to support public regulation than when they were provided generic information regarding the issues or were informed of initiatives on the part of California or New York City. Liberals, overall, were more influenced by public governance than private governance, just as we would predict. Our results strongly suggest that source credibility does indeed matter and that private corporations as messengers do have the

potential to reduce polarization over issues regarding food production and by extension perhaps a wide array of issues that currently divide along conventional liberal-conservative lines.

In addition, the extent to which private governance influenced intended consumer behavior is unclear: in Study 1 the pattern of influence of the McDonald's announcement on consumer intention to purchase cage-free eggs in the future was intriguing because it more positively influenced conservatives compared to liberals. But this interaction fell short of conventional levels of statistical significance in Study 1. In Study 2 there was a main effect of private governance, with the Walmart announcement producing an overall increase in intention to purchase antibiotic-free meat. Although the Walmart x Political Orientation interaction was not statistically significant, an inspection of the predicted means in Figure 9 reveals that the effect of private governance was operating on liberals and moderates, and almost not at all for conservatives, contrary to Study 1. The question of whether private governance is effective at changing consumer behavior as well as changing general attitudes and political policy positions requires extensive further study. It also might be that corporate messaging that explicitly focuses on the role of the consumer as a purchaser is more effective in influencing audience members to reconsider their preferences as consumers.

The results complicate the standard story in economics and political science about the effect of private governance on public politics in several ways. Some observers claim that private governance is sometimes used by corporations to preempt public regulation or support the adoption of ineffective public regulation that tracks private governance (T. Lyon 2012). This is undoubtedly true in some cases. But our studies suggest that even where this is true regarding corporate motivations, private governance through its messaging effects sometimes may increase overall support for effective public regulation, and especially among conservatives.

Second, our results suggest that public agencies implementing new regulations or engaging in public education efforts would benefit from enlisting private corporations and building on existing private governance policies and programs in order to obtain broader buy-in. Public-private partnerships may add to the resources available to the public sector, as well as enhance the legitimacy of the efforts among conservative audiences.

Third, for NGOs and liberal activists, the strategy of trumpeting to their supporters their successes in pushing corporations to engage in private governance may be counterproductive, in that such pronouncement may undercut the messaging effects of private governance for moderate and conservative audiences. Instead, NGOs arguably should focus on securing quiet concessions from corporations and on encouraging those corporations to widely and intensely publicize the new policies they are adopting and the factual case for those new policies. This possibility is not directly addressed in our studies, and is an important question for future research.

A question for future work is thus whether the motive for a company's private governance initiative might differentially influence liberals' and conservatives' respective attitudes toward the underlying issue. For example, if in Study 1 participants learned that McDonald's cage-free egg initiative was a direct response to activist shareholder pressure and lobbying by a liberal public interest group, conservatives' attitudes toward this issue might not be influenced at all, and as a result they would not be more likely to support legal interventions, as we observed in Study 1. Indeed, one could imagine a backlash such that conservatives who learn that liberal pressure led to a private governance initiative might then become less convinced the problem is "real" and less likely to support new legal efforts to address compared to hearing only debate on the issue.

The results of all survey experiments are limited in their generalizability, and as a first effort to examine the effects of private and public governance on consumer attitudes, the results reported here are no exception. As a general matter, the influence of public governance might depend on the identity of the state or locality regulating the contested issue. If the regulation originates from New York City or California (localities that historically are pioneers in progressive social regulation), conservatives might view information from these sources as less credible than if the regulation originates from Alabama, North Dakota, or Oklahoma (states known for more conservative politics). Future studies could pit against one another public governance originating from different states that vary along the perceived dominant political ideology of that state. Similar comparisons could be made among private governance actors. For example, a grocery chain like Whole Foods might be perceived as liberal compared to Albertsons, and a restaurant chain like Cracker Barrel might be perceived as conservative compared to Chili's.

Another question raised by the results of the studies reported here is the extent to which the changes in attitudes we observed might dissipate over time. For example, conservatives in Study 1 who learned about McDonald's cage-free eggs initiative might be initially more disturbed by the practice and more likely to support legislation, but over the ensuing weeks and months the issue might recede from their minds and they might revert back to their previous attitudes. Similarly, liberals in Study 2 who learned about New York City's antibiotic-free meat initiative might be initially more likely to be disturbed by the problem and to support government intervention, but this effect might dissipate over time. In future work, it will be valuable to re-contact participants after a period of time to assess the extent to which the observed attitude changes dissipate over time.

There is no reason to think that the phenomenon we observe in these studies is limited to issues of food policy. A wide variety of policy attitudes might be subject to influences of private or public actors. However, issues subject to a great deal of political polarization are probably less elastic under the conditions we tested in these studies, compared to the food policy issues we examined. Thus, for example, attitudes about climate change are notoriously difficult to influence, as are attitudes about certain aspects of gun control and abortion. On the other hand, there are many other policy issues (e.g., increasing the minimum wage or adopting a single payer health care system) where popular attitudes might be subject to influence by private or public governance. The contours of that influence might depend substantially on the issue itself, and those contours could be mapped in future research.

The studies were designed to be run with an online sample, and as such the information provided about the issue in question was brief and simple. In a real-life setting, exposure to issues like these comes more sporadically, and more typically unfolds over a period of time. Because of this, the dynamics of attitude change resulting from private or public governance efforts might vary from our observations in the studies. We did, however, make efforts to closely follow material that consumers would encounter on their own. The information presented in the debate condition was drawn from news stories and popular-audience books. The information in the McDonald's and Walmart announcements was drawn from companies' press releases on these issues, widely reported on by the press. Nonetheless, encountering this information in real life might differ from our studies in ways that we do not anticipate in these studies.

Conclusion

In recent years, the focus of many non-governmental organizations and activists concerned with sustainability issues – especially animal rights and environmentalism – has been

direct engagement with major corporations. Rather than devoting most of their resources to lobbying legislatures for new government regulation, these groups have invested substantial resources in directly influencing the decisions of major corporations. In some cases, these corporations have changed their practices in response to the demands of public interest groups and the public generally. In this project, we focus on an issue that has not been previously addressed in academic or popular literatures: the downstream effects on consumers of public interest group-corporation negotiation over sustainability practices. The cultural commitments of many consumers entail trust in the private sector and in market institutions and a suspicion of the public sector and government institutions. The embrace of a sustainable practice by a major, consumer-facing corporation might legitimize that practice in the eyes of many of these consumers. As a result, these consumers might be more likely to see the wisdom of government regulation mandating the sustainable practice in question once corporations have adopted and legitimated it. To some extent, the results from our studies supported our hypotheses, especially as regards support for public regulation.

Understood this way, corporate adoption of sustainable practices should be viewed not solely as an alternative to new public regulation, but also as attitudinally-transformative actions that might lessen political polarization and ultimately make new public regulation achievable. Corporate adoptions of sustainable practices might be bridges, rather than solely substitutes for, new public regulation.

References

- Abito, Jose, David Besanko, and Daniel Diermeier. 2014. "Private Politics and Public Interest: NGOs, Corporate Campaigns, and Social Welfare." *Working Paper*, April.
- "Antibiotic Resistance | NARMS | CDC." 2017. Accessed May 20.
<https://www.cdc.gov/narms/faq.html>.
- Aronson, Elliot, J. Turner, and J. Carlsmith. 1963. "Communicator Credibility and Communicator Discrepancy as Determinants of Opinion Change." *Journal of Abnormal and Social Psychology* 67: 31–37.
- Baron, David P. 2003. "Private Politics." *Journal of Economics & Management Strategy* 12 (1): 31–66. doi:10.1111/j.1430-9134.2003.00031.x.
- . 2016. "Self-Regulation and the Market for Activism." *Journal of Economics & Management Strategy* 25 (3): 584–607. doi:10.1111/jems.12162.
- Baron, David P., and Daniel Diermeier. 2007. "Strategic Activism and Nonmarket Strategy." *Journal of Economics & Management Strategy* 16 (3): 599–634. doi:10.1111/j.1530-9134.2007.00152.x.
- Briscoe, Forrest, and Sean Safford. 2008. "The Nixon-in-China Effect: Activism, Imitation, and the Institutionalization of Contentious Practices." *Administrative Science Quarterly* 53 (3): 460–91. doi:10.2189/asqu.53.3.460.
- Deemer, Danielle R., and Linda M. Lobao. 2011. "Public Concern with Farm-Animal Welfare: Religion, Politics, and Human Disadvantage in the Food Sector*." *Rural Sociology* 76 (2): 167–96. doi:10.1111/j.1549-0831.2010.00044.x.
- Diermeier, Daniel. 2007. "Private Politics-A Research Agenda." *The Political Economist*, no. Summer: 1.

- Egorov, Georgy, and Bård Harstad. 2015. "Private Politics and Public Regulation." SSRN Scholarly Paper ID 2744563. Rochester, NY: Social Science Research Network. <http://papers.ssrn.com/abstract=2744563>.
- Gangl, Amy. 2007. "Examining Citizens' Beliefs That Government Should Run Like Business." *Public Opinion Quarterly* 71 (4): 661–70. doi:10.1093/poq/nfm043.
- Hugill, Andrea, Jodi L. Short, and Michael W. Toffel. 2016. "Beyond Symbolic Responses to Private Politics: Examining Labor Standards Improvement in Global Supply Chains." SSRN Scholarly Paper ID 2806966. Rochester, NY: Social Science Research Network. <https://papers.ssrn.com/abstract=2806966>.
- Human Society of the United States. n.d. "Human Health Implications of Non-Therapeutic Antibiotic Use in Animal Agriculture." <http://www.humanesociety.org/assets/pdfs/farm/HSUS-Human-Health-Report-on-Antibiotics-in-Animal-Agriculture.pdf>.
- Kahan, Dan. 2010. "Fixing the Communications Failure." *Nature* 463 (7279): 296–97. doi:10.1038/463296a.
- . 2016. "On the Sources of Ordinary Science Knowledge and Extraordinary Science Ignorance." SSRN Scholarly Paper ID 2794799. Rochester, NY: Social Science Research Network. <http://papers.ssrn.com/abstract=2794799>.
- Landers, Timothy F., Bevin Cohen, Thomas E. Wittum, and Elaine L. Larson. 2012. "A Review of Antibiotic Use in Food Animals: Perspective, Policy, and Potential." *Public Health Reports* 127 (1): 4–22.
- Light, Sarah E., and Eric W. Orts. 2015. "Parallels in Public and Private Environmental Governance." *Michigan Journal of Environmental & Administrative Law* 5: 1.

- Lyon, Thomas. 2012. *Good Cop/Bad Cop: Environmental NGOs and Their Strategies toward Business*. Routledge.
- Lyon, Thomas P., and John W. Maxwell. 2008. "Corporate Social Responsibility and the Environment: A Theoretical Perspective." *Review of Environmental Economics and Policy* 2 (2): 240–60. doi:10.1093/reep/ren004.
- McKendree, M. G. S., C. C. Croney, and N. J. O. Widmar. 2014. "Effects of Demographic Factors and Information Sources on United States Consumer Perceptions of Animal Welfare." *Journal of Animal Science* 92 (7): 3161–73. doi:10.2527/jas.2014-6874.
- Norwood, F. Bailey, and Jayson L. Lusk. 2011. *Compassion, by the Pound: The Economics of Farm Animal Welfare*. OUP Oxford.
- Pew Research Center. 2013. "Favorable Views of Business, Labor Rebound." <http://www.people-press.org/2013/06/27/favorable-views-of-business-labor-rebound/>.
- . 2014. "Beyond Red vs. Blue: The Political Typology." <http://www.people-press.org/2014/06/26/the-political-typology-beyond-red-vs-blue/>.
- Renn, Ortwin, and Debra Levine. 1991. "Credibility and Trust in Risk Communication." In *Communicating Risks to the Public*, edited by Roger E. Kasperson and Pieter Jan M. Stallen, 175–217. Technology, Risk, and Society 4. Springer Netherlands. doi:10.1007/978-94-009-1952-5_10.
- Sternthal, Brian, Lynn W. Phillips, and Ruby Dholakia. 1978. "The Persuasive Effect of Source Credibility: A Situational Analysis." *The Public Opinion Quarterly* 42 (3): 285–314. doi:10.2307/2748294.

- Stolle, Dietlind, Marc Hooghe, and Michele Micheletti. 2005. "Politics in the Supermarket: Political Consumerism as a Form of Political Participation." *International Political Science Review* 26 (3): 245–69. doi:10.1177/0192512105053784.
- Valero, Lucinda, and Will Rhee. 2012. "When Fox and Hound Legislate the Hen House: A Nixon-in-China Moment for National Egg-Laying Standards Food, Global Food: Do We Have What It Takes to Reinvent the U.S. Food System: Essay." *Maine Law Review* 65: 651–84.
- Vandenbergh, Michael P. 2006. "New Wal-Mart Effect: The Role of Private Contacting in Global Governance, The." *UCLA Law Review* 54: 913.
- . 2013. "Private Environmental Governance." *Cornell Law Review* 99: 129.
- Vandenbergh, Michael P., and Jonathan A. Gilligan. 2015. "Beyond Gridlock." *Columbia Journal of Environmental Law* 40: 217–304.
- Wansink, Brian, and Jeffery Sobal. 2007. "Mindless Eating: The 200 Daily Food Decisions We Overlook." *Environment and Behavior* 39 (1): 106–23. doi:10.1177/0013916506295573.

**Supporting Information for
Regulation, Public Attitudes, and Private Governance**

Sample characteristics

	Study 1	Study 2
Age		
18-24	11.1%	6.3%
25-34	19.7	8.6
35-44	22.9	10.1
45-54	17.8	12.0
55-64	18.4	24.1
65-74	8.8	23.2
75+	1.3	15.8
Female	51.6%	64.27%
Education		
No HS degree	1.3%	1.8%
HS/GED degree	27.8	24.1
Voc/Tech	11.1	
Some college	45.0	40.22
College degree		22.08
Adv degree	14.8	11.8

Text for Study 1

[All participants viewed the following information].

Battery Cages v. Cage Free Debate

The vast majority of egg-laying chickens in the U.S. are confined in battery cages. Each chicken is separately caged and has an average of 67 square inches of space (less than a sheet of paper). Some egg-laying chickens are housed in cage-free systems, where chickens are able to move around a hen house and interact with one another. There is an ongoing debate as to which production method is better for both the chickens and humans who consume eggs.

Pro Battery Cages

Animal Welfare: People in favor of battery cage production say that it is safer for the chickens themselves because it prevents chickens from aggressively pecking and even killing one another.

Safety: They also say that battery cage production produces healthier eggs, because there is a greater risk of disease in an open hen house, where disease can easily pass from one chicken to another.

Cost: Finally, they note that battery cage production is less expensive than cage free production, therefore allowing consumers to buy eggs at lower cost than cage free production.

Anti-Battery Cages

Animal Welfare: People in favor of cage free production say that battery cages are inhumane, because they prevent chickens from engaging in any of their natural movements, causing them stress and frustration. In battery cages, chickens barely have room to stand up and turn around. In cage free production, hens have room to roam around on litter, nest in separate boxes, jump onto elevated perches, and peck and scratch.

Safety: People in favor of cage free production say that with proper cleaning and testing the risk of disease is no greater in cage free production than in battery cage production. Some people even suggest that cage free eggs may be healthier for human to consume.

Cost: Finally, people say that cage free eggs can be produced at a cost that is not significantly higher than eggs produced using battery cages.

[Participants in the Debate (Control) condition viewed only the above information, while participants in the Private Governance (McDonald's) and Public Governance (California) conditions viewed both the above information and one of the two sections below, respectively]:

McDonald's Eggs

Announcement: In September 2015, McDonalds announced that all its eggs will come from cage-free chickens within ten years. **Animal Welfare:** "Animal welfare has always been important to us and our customers," explained Marion Gross, the company's chief supply chain officer. "Today's announcement is another big milestone building on our work with industry experts and suppliers to improve the treatment of animals."

Other Concerns: In 2010, McDonalds initiated research with the Coalition for Sustainable Egg Supply to better understand the impact of various hen housing systems on animal health and welfare, the environment, worker health, food safety, and food affordability.

California Eggs

Announcement: In September 2015, the Governor of California announced that all eggs served in public schools, colleges, and other state facilities will come from cage-free chickens within ten years. **Animal Welfare:** "Animal

welfare has always been important to our citizens," explained the Governor. "Today's announcement is another big milestone building on our work with industry experts and suppliers to improve the treatment of animals."

Other Concerns: In 2010, California initiated research with the Coalition for Sustainable Egg Supply to better understand the impact of various hen housing systems on animal health and welfare, the environment, worker health, food safety, and food affordability.

[All participants were presented with the following questions in random order, on a scale from 1 (Strongly disagree) to 5 (Strongly agree)], following the prompt "Please indicate the extent to which you disagree or agree:"]

If the price was the same, I would prefer to eat cage free eggs than battery cage eggs.

Battery cage egg production disturbs me.

Cage free egg production is better for animal welfare than battery cage egg production.

Cage free eggs are as safe to eat as eggs produced using battery cages.

The welfare of farm animals matters to me.

The government should restrict the use of battery cage egg production.

Text for Study 2

[All participants viewed the following information].

Antibiotic Use in Farm Animals

The vast majority of livestock in the U.S. are given antibiotics in their daily feed. These antibiotics are used for promoting rapid growth. The antibiotics also prevent disease among animals raised in crowded conditions. Some public health experts oppose giving antibiotics to animals in their daily feed.

They argue that the overuse of antibiotics in animals can worsen the problem of

Drug resistant superbugs. Each year in the United States, at least 2 million people

become infected with bacteria that are resistant to antibiotics and at least 23,000

people die each year as a direct result of these infections.

[Participants in the Debate (Control) condition viewed only the above information, while participants in the Private Governance (Walmart) and Public Governance (New York City) conditions viewed both the above information and one of the two sections below, respectively]:

Walmart

Announcement: In May 2015, Walmart announced that it had completed its study of the use of antibiotics in daily feed in livestock production. As part of this study, Walmart considered arguments in favor of and against the daily use of antibiotics in the production of eggs, poultry, pork, and beef. Walmart concluded that, on balance, the routine use of antibiotics increases risks to human health and increases animal suffering, and it is not an acceptable practice. Walmart announced that it will transition over the next few years to stocking its stores only with meat that was produced without the use of antibiotics.

NYC

Announcement: In May 2015, the Mayor of New York City announced that the City had completed its study of the use of antibiotics in daily feed in livestock production. As part of this study, the City considered arguments in favor of and against the daily use of antibiotics in the production of eggs, poultry, pork, and beef.

The City concluded that, on balance, the use of antibiotics increases risks to human health and increases animal suffering. The City announced that it will transition over the next few years to serving only antibiotic-free meat in schools and other City facilities.

[All participants were presented with the following questions in random order, on a scale from 1 (Strongly disagree) to 5 (Strongly agree)], following the prompt "Please indicate the extent to which you disagree or agree:"]

If the price was the same, I would prefer to buy meat produced without antibiotics.

The routine use of antibiotics in livestock production disturbs me.

The question of whether to use routine antibiotics in livestock production should be left to the judgment of the owner of the livestock facility.

Giving routine antibiotics to livestock is a threat to human health.

Would you oppose or support a law banning the routine use of antibiotics in livestock production?

Giving routine antibiotics to livestock is an acceptable practice.

[All participants were presented with the following question, followed by a drop down menu with selections ranging from "nothing" and then "5 cents" in 5 cent increments through "\$1 or more"]

How much more money would you be willing to pay in the grocery store for a one pound package of bacon certified to be produced without the use of antibiotics?

Self-Reported Political Orientation Frequencies

Study 1

<i>Political Orientation</i>	<i>Frequency</i>	<i>Percent</i>
1 - Very Liberal	34	7.28
2 - Liberal	54	11.56
3 - Moderate/Liberal	58	12.42
4 - Moderate	157	33.62
5 - Moderate/Conservative	76	16.27
6 - Conservative	53	11.35
7 - Very Conservative	35	7.49
Total	467	100.00

"What is your political orientation?"

Study 2

<i>Social Political Orientation</i>	<i>Frequency</i>	<i>Percent</i>
1 - Very Liberal	59	10.52
2 - Liberal	84	15.08
3 - Moderate/Liberal	59	10.59
4 - Moderate	126	22.62
5 - Moderate/Conservative	80	14.36
6 - Conservative	79	14.18
7 - Very Conservative	70	14.18
Total	557	100.00

"What is your political orientation regarding social issues? (e.g., abortion, same sex marriage, capital punishment, illegal immigration)"

<i>Economic Political Orientation</i>	<i>Frequency</i>	<i>Percent</i>
1 - Very Liberal	37	6.64
2 - Liberal	55	9.87
3 - Moderate/Liberal	76	13.64
4 - Moderate	137	24.60
5 - Moderate/Conservative	87	15.62
6 - Conservative	95	17.06
7 - Very Conservative	70	12.57
Total	557	100.00

"What is your political orientation regarding economic issues? (e.g., taxes, government spending and regulation)"

Descriptive Statistics for Attitude Measures

Study 1

	<i>Disturb</i>	<i>Better</i>	<i>Price</i>	<i>Govt</i>	<i>Safe</i>	<i>Welfare</i>	<i>N</i>
Debate	3.67 (1.221)	4.24 (0.970)	4.39 (0.905)	3.44 (1.302)	4.09 (1.048)	4.21 (0.974)	160
McDonalds	3.92 (1.154)	4.27 (0.848)	4.35 (0.965)	3.77 (1.072)	4.05 (1.033)	4.40 (0.829)	158
California	3.70 (1.244)	4.22 (0.950)	4.41 (0.870)	3.69 (1.283)	4.04 (1.102)	4.25 (1.033)	149
Total	3.77 (1.209)	4.24 (0.922)	4.39 (0.913)	3.63 (1.228)	4.06 (1.059)	4.29 (0.949)	467

Means (standard deviations)

Disturb: Battery cage egg production disturbs me.

Better: Cage free egg production is better for animal welfare than battery cage egg production.

Price: If the price was the same, I would prefer to eat cage free eggs than battery cage eggs.

Govt: The government should restrict the use of battery cage egg production.

Safe: Cage free eggs are as safe to eat as eggs produced using battery cages.

Welfare: The welfare of farm animals matters to me.

Study 2

	<i>Ban</i>	<i>Threat</i>	<i>Ownerjudge</i>	<i>Disturb</i>	<i>Price</i>	<i>Accept</i>	<i>WTP</i>	<i>N</i>
Debate	3.73 (1.14)	4.03 (1.03)	2.46 (1.25)	3.89 (1.19)	4.47 (.90)	2.35 (1.23)	38.48 (36.91)	188
Walmart	4.11 1.06	4.25 (.98)	2.25 (1.34)	4.18 (1.07)	4.66 (.69)	2.04 (1.17)	41.14 (38.70)	201
NYC	4.13 1.04	4.28 (.95)	2.21 (1.29)	4.24 (1.04)	4.60 (.78)	2.11 (1.17)	42.05 (38.50)	168
Total	3.98 (1.09)	4.18 (.99)	2.31 (1.30)	4.10 (1.11)	4.58 (.80)	2.17 (1.20)	40.52 (38.00)	557

Means (standard deviations)

Ban: Combined Measure: Would you oppose or support a law banning the routine use of antibiotics in livestock production? and The federal government should ban the routine use of antibiotics in livestock production.

Threat: Giving routine antibiotics to livestock is a threat to human health.

Ownerjudge: The question of whether to use routine antibiotics in livestock production should be left to the judgment of the owner of the livestock facility.

Disturb: The routine use of antibiotics in livestock production disturbs me.

Price: If the price was the same, I would prefer to buy meat produced without antibiotics.

Accept: Giving routine antibiotics to livestock is an acceptable practice.

WTP: How much more money would you be willing to pay in the grocery store for a one-pound package of bacon certified to be produced without the use of antibiotics?