

GENETICALLY MODIFIED ORGANISMS,  
RELIGIOUSLY MOTIVATED CONCERNS: THE ROLE  
OF THE “RIGHT TO KNOW” IN THE GM FOOD  
LABELING DEBATE

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I. Introduction.....	115
II. The FDA Policy on Labeling GM Foods: A Historical, Legal, and Political Overview .....	117
A. Current FDA Standards .....	117
B. Current FDA Standards: Case Law.....	119
C. Prior FDA Standards: A Political Perspective .....	121
III. Religious Beliefs & Ethics as Applied to GM Food .....	123
A. The Christian Perspective .....	124
B. The Muslim Perspective .....	125
C. The Jewish Perspective .....	126
D. The Buddhist Perspective .....	127
IV. Limitations on First Amendment Restrictions .....	128
A. Regulation of Commercial Speech .....	128
B. Speech Regulation and the Establishment Clause .....	130
1. Is Consumer Interest a Legitimate Purpose? .....	131
2. Does the Primary Effect of GM Food Labeling Advance Religion? .....	132
3. Is a Labeling Requirement Excessive Government Entanglement with Religion? .....	133
V. Should a "Right to Know" Based on Religious Belief be Considered Material?.....	134
A. Information Overload .....	134
B. Restriction of Liberty .....	135
C. Cost-Benefit Analysis .....	135
VI. Conclusion.....	136

I. INTRODUCTION

Should we be teaching our children that the *corn* says “moo?” Thanks to the increasing prevalence of genetically modified (GM) foods, such a question does not sound as far-fetched as it might have at one time. To understand the particulars

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of the GM food labeling debate, it is first important to have a working definition of *genetically modified* food. Unlike cross-breeding or hybridization, genetically modified food (sometimes called *bioengineered* food) is created by splicing the DNA of one organism into that of an entirely different species.<sup>1</sup> The effect is to assign attributes to a plant or animal that it would be otherwise unable to inherit by other means; “pigs may, for example, contain spinach genes or corn may contain the anti-freeze gene from a flounder.”<sup>2</sup> There are essentially no limitations to inter-species genetic combination thanks to this new technology.

Many who express concerns about GM foods worry about safety. For example, harmful, unforeseen mutations are a potential risk associated with gene splicing.<sup>3</sup> Among scientists, though, there is little question about the safety of GM foods.<sup>4</sup> Nevertheless, a July 2013 Gallup poll found that almost half of Americans cling to the belief that GM foods are dangerous.<sup>5</sup> Moreover, 93% of respondents in a January 2013 poll conducted by *The New York Times* expressed support for mandatory labeling of GM foods.<sup>6</sup>

Some of what drives the overwhelming support for GM food labeling is ignorance. Generally, the public is not aware of the prevalence of GM food on store shelves, and “[v]ery few people admit to knowing much of anything concerning government regulation of genetically modified foods.”<sup>7</sup> Nevertheless, the clear message of the poll data is that Americans remain skeptical of GM foods, irrespective of assurances of safety by the scientific community, and maintain a strong interest in knowing what exactly they are ingesting.

This newly-discovered ability to transfer genetic material from animals to plants carries heightened implications for Americans who hold sincere religious

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1. Jennifer Lapidus, *Genetically Modified Food Should be Labeled in GENETICALLY MODIFIED FOOD* 31, 32 (Jennifer L. Skancke ed., 2009).

2. *Id.*

3. Philip G. Peters & Thomas A. Lambert, *Regulatory Barriers to Consumer Information About Genetically Modified Foods in LABELING GENETICALLY MODIFIED FOOD, THE PHILOSOPHICAL AND LEGAL DEBATE* 151, 168 (Paul Weirich ed., 2007).

4. Michael White, *The Scientific Debate About GM Foods is Over: They're Safe*, PAC. STANDARD (Sept. 24, 2013, 10:00 AM), <http://www.psmag.com/health/scientific-debate-gm-foods-theyre-safe-66711/>.

5. *Nutrition & Food*, GALLUP.COM (July 10–14, 2013), <http://www.gallup.com/poll/6424/nutrition-food.aspx#1>.

6. Allison Kopicki, *Strong Support for Labeling Modified Foods*, N.Y. TIMES, July 27, 2013, [http://www.nytimes.com/2013/07/28/science/strong-support-for-labeling-modified-foods.html?\\_r=1&](http://www.nytimes.com/2013/07/28/science/strong-support-for-labeling-modified-foods.html?_r=1&).

7. W.K. KELLOGG FOUND., PERCEPTIONS OF THE U.S. FOOD SYSTEM: WHAT AND HOW AMERICANS THINK ABOUT THEIR FOOD 18 (2005).

beliefs, many of which mandate rigid dietary restrictions.<sup>8</sup> In spite of the legitimate concerns of various religious faiths, the Food & Drug Administration (FDA)—tasked with regulating GM food and its labeling or non-labeling—has adopted a policy that does not consider the consumer’s “right to know” as a factor in labeling decisions.<sup>9</sup>

This Note argues that the FDA’s policy limiting the import of the consumer’s “right to know” in the context of GM food labeling should be revised. Whether such labeling should be mandatory is a question that will not be addressed herein; there are numerous competing factors that influence labeling requirements and it would be presumptuous to suggest that religious belief should trump them all. This Note’s scope is limited to the issue of whether the consumer’s “right to know” *qua* religious beliefs should be construed as a material factor in the labeling debate by the FDA.

Part II provides an overview of the FDA’s policy decisions regarding the consumer’s “right to know” in labeling disputes, placing those decisions in an appropriate historical and political context. It also reviews important case law to aid in understanding the current legal environment as it relates to the consumer’s “right to know” in food labeling. Part III discusses several religious belief systems, the role of dietary restrictions within those belief systems, and how the FDA’s current policy burdens adherents’ free exercise of religion. Part IV includes an in-depth analysis of the test that must be met for a court to allow a statute or agency policy burdening commercial speech to stand; this section also includes an analysis of the test that must be met for a court to allow a statute or agency policy burdening citizens’ free exercise of religion. Finally, Part V considers the risks and benefits attendant to a policy shift regarding the “right to know” in GM food labeling, concluding that the exalted role sincerely-held religious belief plays in American culture necessitates such a change in policy.

## II. THE FDA POLICY ON LABELING GM FOODS: A HISTORICAL, LEGAL, AND POLITICAL OVERVIEW

### A. *Current FDA Standards*

There is strong consumer interest in mandatory labeling for GM foods, so

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8. See, e.g., Christopher T. Jones, *The Manic Organic Panic: First Amendment Freedoms and Farming or the Attack of the Agriculture Appropriations Rider*, 26 J. LAND RESOURCES & ENVTL. L. 423, 430–31 (2006).

9. See *Guidance for Industry: Voluntary Labeling Indicating Whether Foods Have or Have Not Been Developed Using Bioengineering; Draft Guidance*, FDA, <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm059098.htm> (last updated Apr. 28, 2015).

why does the FDA refuse to act?<sup>10</sup> Any authority the FDA has to mandate labeling for GM foods is granted by the Federal Food, Drug, & Cosmetic Act (FDCA) under the section on Misbranded Food.<sup>11</sup> This section of the FDCA allows the FDA to mandate specific labeling if the existing labeling would be “false or misleading in any particular, or . . . its advertising is false or misleading in a *material* respect.”<sup>12</sup> While the FDCA does not provide a clear definition of *materiality*, there are hints as to its meaning within the law’s definition of mislabeling.<sup>13</sup> The law states that mislabeling can be shown by misleading statements on the packaging, or alternatively, by examining “the extent to which the labeling or advertising fails to reveal facts material in the light of such representations or material with respect to consequences which may result from the use of the article to which the labeling or advertising relates.”<sup>14</sup> Accordingly, materiality is present where the failure to reveal certain facts results in some unspecified consequences.

The FDCA does not provide any further clarification as to what sort of consequences trigger a finding of materiality, so interpretation of this section is the responsibility of the FDA.<sup>15</sup> In a 1992 statement clarifying its policies, the FDA indicated its understanding that it could only use its food labeling authority to the extent that mislabeling poses health dangers.<sup>16</sup> Thus, the agency signaled its interpretation of materiality would be limited to facts that would, *in absentia*, create health concerns.

The new trend of bioengineering food was specifically identified as a fact which would *not* be considered material under this new interpretation of the FDCA.<sup>17</sup> Since the FDA was not aware of any data suggesting that GM food “present[s] any different or greater safety concern than foods developed by traditional plant breeding,” the agency determined that it was not within its power to require mandatory labeling.<sup>18</sup> Thus, the FDA established that the consumer’s “right to know”—even in the interest of sincerely held religious beliefs—is not a sufficient basis for determining whether a fact or consequence is or is not material.<sup>19</sup>

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10. Kopicki, *supra* note 6.

11. 21 U.S.C. § 343(a) (2012).

12. *Id.* (emphasis added).

13. *Id.* at § 321(n).

14. *Id.*

15. *See id.*

16. Statement of Policy: Foods Derived from New Plant Varieties, 57 Fed. Reg. 22984-01, 22990 (May 29, 1992).

17. *Id.*

18. *Id.*

19. Food Labeling; Foods Derived from New Plant Varieties, 57 Fed. Reg. 25837-03, 25838 (Apr. 28, 1993).

A year later, the FDA sent out a request for data on some labeling issues, in which it reaffirmed its policy regarding GM food labeling and clarified its reasoning for this position.<sup>20</sup> The agency took a somewhat philosophical tack when defending its decision not to consider sincerely-held religious beliefs as a basis for mandatory labeling of GM foods. It “conclude[d] that such genetic alterations do not change the essential nature of the plant, nor do they confer ‘animal-like’ characteristics to the plant.”<sup>21</sup> Moreover, the FDA indicated its belief that because animal genes transferred to plants can be characterized as having been integrated into the plant’s genetic structure, there is a scientific basis to their policy decision.<sup>22</sup> Some argue that scientific justifications are inapplicable to a determination of what is material to religious believers because “[s]cience cannot dictate what religion or culture deems to be ‘material’ any more than religion or culture can dictate scientific principles.”<sup>23</sup> Nevertheless, although the agency ultimately requested additional information on the matter, its intention to rely only on what it perceived as scientifically relevant data had been established.<sup>24</sup>

### *B. Current FDA Standards: Case Law*

Likely as a result of the clarity of its policy statements in the early 1990s, as well as the deference courts must show to agency interpretations of enabling statutes, there have been few direct challenges to the FDA’s current interpretation of materiality in the FDCA.<sup>25</sup> The Supreme Court has not heard a case on this topic. Additionally, federal legislation designed to make labeling of GM foods mandatory has failed to gain traction in Congress for over a decade.<sup>26</sup> As of this writing, the most recent Congressional effort to mandate GM food labeling has an estimated less than 1% chance of being enacted.<sup>27</sup> Contributing to the unlikelihood of

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20. *Id.*

21. *Id.*

22. *Id.*

23. Thomas O. McGarity, *Frankenfood Free: Consumer Sovereignty, Federal Regulation, and Industry Control in Marketing and Choosing Food in the United States* in LABELING GENETICALLY MODIFIED FOOD, THE PHILOSOPHICAL AND LEGAL DEBATE 128, 141 (Paul Weirich ed., 2007).

24. Food Labeling; Foods Derived From New Plant Varieties, at 25839.

25. *Udall v. Tallman*, 380 U.S. 1, 16 (1965).

26. See H.R. 3553, 112th Cong. (2011); H.R. 5577, 111th Cong. (2010); H.R. 6636, 110th Cong. (2008); H.R. 5269, 109th Cong. (2006); H.R. 2916, 108th Cong. (2003); H.R. 4814, 107th Cong. (2002); Genetically Engineered Food Right to Know Act, H.R. 3377, 106th Cong. (1999).

27. Genetically Engineered Food Right-to-Know Act, H.R. 1699, 113th Cong. (2013), available at <http://www.govtrack.us/congress/bills/113/hr1699> (estimating 0% chance of enactment based on data showing 3% of proposed bills were enacted between 2011–2013).

Congressional action in favor of mandatory labeling is “strong opposition from the agriculture and biotech industries.”<sup>28</sup>

There have been two high-profile lower federal court cases concerning GM food labeling, however; the first of these is *Stauber v. Shalala*.<sup>29</sup> In *Stauber*, consumers of commercial dairy products brought suit against the Secretary of the Department of Health and Human Services in a Wisconsin District Court objecting to the approval of a genetically engineered drug used in dairy cows, which had the effect of transferring genetic information from one group of cattle to others.<sup>30</sup> The court ultimately ruled in favor of the defendants, noting that the introduction of the drug caused no organoleptic changes (i.e. changes able to be perceived by touch, taste, smell, or sight) to the final product, and therefore was not to be considered material.<sup>31</sup>

Furthermore, the *Stauber* court specifically declined to view consumer interest as a sufficient basis to consider material the mere fact of the genetically engineered drug additive.<sup>32</sup> The court indicated its deference to the FDA’s stated policy on this issue, arguing that if the dairy product at issue in the case “does not differ in any significant way from what it purports to be then it would be misbranding to label the product as different, even if consumers misperceived the product as different.”<sup>33</sup> This conclusion rests on the assumption that a product will only differ *significantly* (read as: materially) if there has been an organoleptic change.<sup>34</sup> Thus, while citing “no authority for this proposition except to note that this was the opinion of the FDA [, the court] . . . elevated an informal FDA policy to a rule of law.”<sup>35</sup>

This opinion was reiterated in another federal district court case, *Alliance for Bio-Integrity v. Shalala*.<sup>36</sup> The *Alliance* decision is arguably more damning for

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28. Libby Foley, *The Anti-Label Lobby*, ENVTL. WORKING GROUP (Sept. 3, 2014), <http://www.ewg.org/research/anti-label-lobby> (explaining a report showing that the agricultural, biotech and food industries have spent millions opposing labeling laws in recent years).

29. See *Stauber v. Shalala*, 895 F. Supp. 1178 (W.D. Wis. 1995).

30. *Id.* at 1192–93.

31. *Id.* at 1193.

32. *Id.*

33. *Id.*

34. See *id.*

35. David Alan Nauheim, Comments, *Food Labeling and the Consumer’s Right to Know: Give the People What They Want*, 4 LIBERTY UNIV. L. REV. 97, 120–21 (2009).

36. See generally *Alliance for Bio-Integrity v. Shalala*, 116 F. Supp. 2d 166 (D.D.C. 2000).

supporters of the theory that a right to know *qua* religious beliefs should be taken into consideration regarding materiality.<sup>37</sup> The court downplayed the role of religious beliefs in the labeling debate when it ruled that claims for mandatory labeling under the Free Exercise Clause and the federal Religious Freedom Restoration Act (RFRA) must fail.<sup>38</sup>

The Free Exercise claim was dismissed easily by the court because both parties agreed that the FDA's GM food labeling policy was neutral and generally applicable, but the RFRA claim was not as quickly decided.<sup>39</sup> Although declared unconstitutional as applied to the states, the RFRA remains in effect for the federal government itself and provides that there shall be no "substantial[] burden [to] a person's exercise of religion even if the burden results from a rule of general applicability . . ." <sup>40</sup> In the instant case, the court determined that the failure to label GM foods did not constitute a *substantial* burden on plaintiffs' religious beliefs because plaintiffs were free to buy food from their preferred sources.<sup>41</sup>

As in *Stauber*, the *Alliance* court ultimately deferred to the statutory interpretation favored by the FDA regarding materiality due to a lack of Congressional guidance on the issue.<sup>42</sup> However, the court went a step further: it opined that as a result of the FDA's previous determination that consumer interest alone is insufficient to make a fact material—and because that interpretation is reasonable—the FDA is now incapable of reinterpreting the meaning of "material" in the FDCA.<sup>43</sup> When considering the judicial principle of deference to agency interpretations of enabling statutes, it seems unlikely that any court would follow this dictum.<sup>44</sup> Nevertheless, it highlights the great weight afforded to agency interpretations; unless shown to be unreasonable, such interpretations will be viewed by courts as binding to the point that the interpretation might be considered inherent in the statute.<sup>45</sup>

### *C. Prior FDA Standards: A Political Perspective*

What is remarkable in statements such as those of the *Alliance* court, above, is the fact that the FDA actually did consider consumer interest sufficient to make

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37. *See id.*

38. *Id.* at 179-81.

39. *Id.* at 179-80.

40. 42 U.S.C. § 2000bb-1(a) (2012).

41. *Alliance for Bio-Integrity*, 116 F. Supp. 2d at 181.

42. *Id.* at 178.

43. *See id.* at 179 ("[I]t is doubtful whether the FDA would even have the power under the FDCA to require labeling in a situation where the sole justification for such a requirement is consumer demand.").

44. *See id.*

45. *See id.*

a fact material within the meaning of the FDCA prior to its 1992 policy statement<sup>46</sup> In a statement on irradiated food released in 1986, the FDA decided to require mandatory labeling based on consumer comments relating to both the organoleptic changes caused by irradiation and pure consumer interest.<sup>47</sup> Even in the absence of safety concerns, the FDA held the deception caused by the implication that the food has not been processed is enough to consider that fact material.<sup>48</sup> The agency's understanding that consumer interest was sufficient to make a fact material is made explicit later in the statement: "Whether information is material under section 201(n) of the act depends not on the abstract worth of the information but on *whether consumers view such information as important* and whether the omission of label information may mislead a consumer."<sup>49</sup>

How, within the span of just six years, did the FDA come to the novel conclusion that it should only use its "authority to the extent necessary to protect public health?"<sup>50</sup> As it turns out, the 1992 policy statement came on the heels of Vice-President Dan Quayle's announcement of Bush administration plans for a regulatory relief program geared to biotechnology.<sup>51</sup> The program was designed to "relax . . . standards of review and tak[e] the position that biotechnology products should be considered no different and get no more scrutiny than any other chemicals, pesticides or drugs to be reviewed."<sup>52</sup>

Regarding the shift in policy, *The New York Times* quoted a top official at the FDA:

When investors think of putting money into biotechnology, they will take a walk if they think the [FDA] is going to be obstructionist. . . . We are signaling to the industry that we will keep our standards but we will make things move. After all, this nation is betting a lot on its biotechnology industry.<sup>53</sup>

Money was the driving force behind the deregulation; biotechnology was

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46. See *Irradiation in the Production, Processing, and Handling of Food*, 51 Fed. Reg. 13376-01, 13388 (Apr. 18, 1986) (codified at 21 C.F.R. pt. 179).

47. *Id.* ("[T]he large number of consumer comments requesting retail labeling attest to the significance placed on such information by consumers.")

48. *Id.*

49. *Id.*

50. Statement of Policy: Foods Derived from New Plant Varieties, 57 Fed. Reg. 22984-01, 22990 (May 29, 1992).

51. Philip J. Hilts, *U.S. Says it Will Speed Gene-Product Approvals*, N.Y. TIMES, Mar. 6, 1992, <http://www.nytimes.com/1992/03/06/business/us-says-it-will-speed-gene-product-approvals.html>.

52. *Id.*

53. *Id.*



already a \$4 billion industry by 1991 and was estimated to reach \$50 billion by the end of the decade.<sup>54</sup> Accordingly, consumer interest based labeling requirements would hinder the quick approval rate sought by the Bush administration and the biotech industry.<sup>55</sup> It would also allow a public perception of health hazards associated with GM foods to be controlling where the FDA had found none.<sup>56</sup>

Yet even at the time, it was clear that the FDA's new, relaxed standards would have implications for those with sincerely-held religious beliefs and other non-scientific reasons to prefer avoiding GM foods. *The New York Times*, in a June 1992 article, pointed to the effect of the policy on the diets of Orthodox Jews, Buddhists, Muslims, and vegetarians/vegans.<sup>57</sup> David Kessler, appointed by President George H.W. Bush in 1990, was the FDA Commissioner during the implementation of the Bush Administration's regulatory relief program.<sup>58</sup> In response to questions about the new policy's effect on those with sincerely-held religious beliefs, Kessler said, "We will be talking to religious leaders."<sup>59</sup> As evidenced by the 1993 policy statements outlining the agency's reliance on scientific rationale in reference to GM food labeling, Kessler's discussions with religious leaders—if they occurred at all—failed to produce any modifications to the FDA policy.<sup>60</sup>

### III. RELIGIOUS BELIEFS & ETHICS AS APPLIED TO GM FOOD

Almost half of those surveyed in one poll said that their ethical beliefs drive their views on GM food, and one in three agreed that their religious beliefs specifically played a part in determining their opinions.<sup>61</sup> In its policy decisions since 1992, the FDA has shown a tendency toward undervaluing the role of religious belief in the lives of consumers, seemingly viewing such beliefs as a matter of preference.

Fundamental religious and moral values do not affect consumer and citizen

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54. Warren E. Leary, *Cornucopia of New Foods is Seen as Policy on Engineering Is Eased*, N.Y. TIMES, May 27, 1992, <http://www.nytimes.com/1992/05/27/us/cornucopia-of-new-foods-is-seen-as-policy-on-engineering-is-eased.html>.

55. *See id.*

56. *See id.*

57. Marian Burros, *Eating Well Gene-Spliced Foods: Is It Safe Soup Yet?*, N.Y. TIMES, June 17, 1992, <http://www.nytimes.com/1992/06/17/garden/eating-wellgene-spliced-foods-is-it-safe-soup-yet.html?pagewanted=all&src=pm>.

58. David A. Kessler, *Commissioner's Page*, FDA, <http://www.fda.gov/AboutFDA/CommissionersPage/ucm113239.htm> (last updated June 4, 2009).

59. Burros, *supra* note 57.

60. *See* Food Labeling; Foods Derived from New Plant Varieties, 57 Fed. Reg. 25837-03, 25838 (Apr. 28, 1993).

61. W.K. KELLOGG FOUND., *supra* note 7.

behavior in the same way as mere preferences, and they also carry with them moral and legal claims for respect and tolerance that mere preferences do not, especially in societies committed to the legal protection of religious liberty and freedom of conscience.<sup>62</sup>

Therefore, to have a full understanding of the varying interests at stake in the GM food labeling controversy, it is important to review the varieties of sincerely-held religious beliefs across multiple faiths.

#### A. *The Christian Perspective*

The majority of Catholics and Protestants are opposed to the transfer of genetic material from one organism to another.<sup>63</sup> However, just as the term *Christian* is not all-encompassing, the knowledge that the majority of Christians oppose GM food also does not provide enough information. What are the different reasons that practitioners of Christian faiths give for opposing GM food?

Some make a textual argument. Although there is evidence of selective breeding in the Bible, some Seventh-Day Adventists contend that transferring genes between unrelated species is inappropriate “since God created the different creatures ‘after their kinds’ . . . .<sup>64</sup>” Another potential objection based on textual interpretation draws on Old Testament prohibitions about sowing multiple strains of seeds or making garments out of two types of material.<sup>65</sup> However, most Old Testament sanctions relating to food and agriculture are generally seen as non-binding on Christians.<sup>66</sup>

Some Christians object to GM food on the ground that the process “usurp[s] the creative prerogative of God by doing something that belongs to God alone, taking on a role that is not ours to have.”<sup>67</sup> As with the textual arguments presented above, this view is open to criticism. For instance, Christians who maintain a more liberal view of genetic modification might point to Biblical passages wherein God grants mankind dominion over nature: impliedly authorizing humans to make use

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62. Conrad G. Brunk & Harold Coward, *Introduction in ACCEPTABLE GENES? RELIGIOUS TRADITIONS AND GENETICALLY MODIFIED FOODS* 3 (Conrad G. Brunk & Harold Coward eds., 2009).

63. THE PEW INITIATIVE ON FOOD AND BIOTECHNOLOGY, *GENETICALLY MODIFYING FOOD: PLAYING GOD OR DOING GOD’S WORK* 1 (2001).

64. Donald Bruce, *Some Christian Reflections on GM Food*, in *ACCEPTABLE GENES? RELIGIOUS TRADITIONS AND GENETICALLY MODIFIED FOODS* 115, 118 (Conrad G. Brunk & Harold Coward eds., 2009); *Genesis* 1:24.

65. Bruce, *supra* note 64, at 119.

66. *Id.*

67. *Id.* at 112.

of the animals and plants as we see fit.<sup>68</sup>

While these objections illustrate the range of Christian responses to GM foods, they do nothing to discount those who do maintain such beliefs sincerely. So long as Christians and other religiously motivated persons base their response to GM food on what they perceive as the will of God, they hold a stake in how the FDA defines material for labeling purposes. Furthermore, there are additional theological principles which might be implicated by GM food, including: “[W]isdom with regard to risk-taking, justice toward people, and concern for the poor and about undue power in large companies and governments.”<sup>69</sup>

Religious and ethical values are vital in deciding whether information about the GM status of food products is *material* to consumers.<sup>70</sup> For many Christians, principled religious beliefs suggest that creating GM food is an unacceptable activity; the desire for labeling to avoid being part of what may be viewed as antithetical to God’s plan shows the key role Christian churches play in the GM food debate.<sup>71</sup>

### *B. The Muslim Perspective*

Unlike most Christians, observant Muslims are bound by certain dietary restrictions; consequently, the possibility that plants could contain genetic material from animals is a cause for concern.<sup>72</sup> Because observant Muslims are prohibited from consuming pork, “a potato with a pig gene may well trigger visceral repugnance.”<sup>73</sup> This prohibition on pork products is explicitly spelled out in the Qur’an, a fact which highlights the spiritual danger associated with consumption of non-labeled GM food.<sup>74</sup>

“One overriding and forceful normative trope in Muslim ethics is the preservation of naturalness (*fitra*).”<sup>75</sup> The concept of *fitra* is one of the highest ideals in Islamic ethics; while some view its call for naturalness metaphorically, there are

68. See *Genesis* 1:26.

69. Bruce, *supra* note 64.

70. ROBERT STREIFFER & ALAN RUBEL, *Genetically Engineered Animals and the Ethics of Food Labeling in LABELING GENETICALLY MODIFIED FOOD: THE PHILOSOPHICAL AND LEGAL DEBATE* 63, 71 (Paul Weirich ed., 2007).

71. Bruce, *supra* note 64, at 130-31.

72. Ebrahim Moosa, *Genetically Modified Food and Muslim Ethics in ACCEPTABLE GENES? RELIGIOUS TRADITIONS AND GENETICALLY MODIFIED FOODS* 135, 135 (Conrad G. Brunk & Harold Coward eds., 2009).

73. *Id.*

74. *Id.* at 136.

75. *Id.* at 137.

many who understand it to mean that “nonremedial physical alteration to the human body or nature” are the work of Satan.<sup>76</sup> Nevertheless, Islamic scholars are still in the process of coming to conclusions about whether GM foods are ethically sound. Genetic modification remains a new technology which has “radically change[d] all the inherited presumptions of a religion tradition like Islam . . . present[ing] us with the most profound challenges in trying to make sense of canonical opinions and traditions.”<sup>77</sup>

Part of the trouble associated with determining whether GM foods, including those that use pig genes, are or are not prohibited in the Muslim ethics is that the Qur’an does not provide reasons for its dietary restrictions.<sup>78</sup> The Saudi Council for Islamic Jurisprudence (CIJ), a traditional Muslim authority, has considered the issue since 1998; as yet, they have reached no final conclusion on the ethical implications that GM foods create.<sup>79</sup> Nevertheless, to encourage compliance with God’s dictates, the CIJ issued a *fatwa* (directive) encouraging manufacturers of GM foods “to disclose the contents of such [engineered] substances in order to . . . alert users to [possible] harm and [inform them about products] that are prohibited in terms of juridical-ethics” through labeling.<sup>80</sup>

An individual Muslim’s response to the problem of GM food depends on a number of factors, including the way the adherent “understand[s] the moral commandments of their faith, [and] their meritorious view of science or otherwise.”<sup>81</sup> From the Muslim perspective, whether genetic modification is *material* is ultimately less about facts than about values, and about being able to “resist the darker side effects” of scientific advancements in the name of those values.<sup>82</sup>

### C. The Jewish Perspective

Similar fears about the hubris and safety of GM foods control exist in the Jewish ethics. In one survey, a focus group made up of both Orthodox and non-Orthodox Jews expressed a great deal of concern about whether genetic modification is permissible under the Jewish system of dietary restrictions (known as *kashrut* or *kosher*), in spite of the fact that many in the focus group did not keep kosher

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76. *Id.* at 137–38.

77. *Id.* at 140.

78. *Id.* at 136.

79. *Id.* at 142–43.

80. *Id.*

81. *Id.* at 144.

82. *Id.* at 153–54.

otherwise.<sup>83</sup> “[S]uch is the power of the rabbinic legal system that all of the participants understood why the first problem for Jews would be about the laws of consumption and production.”<sup>84</sup> Because of the complex and non-rational nature of the laws of *kashrut*, survey participants had differing ideas about the reasons various foods are considered kosher; nevertheless, it was clear that “[e]veryone in the group spent considerable time thinking about food and health and showed a lot of concern about its providence.”<sup>85</sup>

However, leaders in the Jewish community have mostly come to a consensus about GM food.<sup>86</sup> Most rabbinic scholars agree that genetic engineering does not violate the divine order, and that biblical verses prohibiting mating ‘diverse kinds’ apply only to true mating and therefore are inapplicable to new technologies such as genetic engineering.<sup>87</sup> With this understanding, there is no need for concern about the possibility of a gene from a non-kosher food item being transferred to one that is kosher; in fact, because all DNA is made of the same basic material, it is misleading to refer to a pig gene as uniquely porcine.<sup>88</sup>

However, unlike other systems of ethics, Jewish norms are based on a detailed set of laws that were allegedly given to Hebrew slaves at Mount Sinai in Egypt.<sup>89</sup> This law has been subject to varying interpretations throughout the millennia, and because the laws about food and its alteration are *hukkim*—that is, given without rational explanation—there is still room for debate regarding the ethical ramifications of consuming GM foods.<sup>90</sup> When one also takes into account the public’s lack of knowledge about GM foods and potential lack of awareness of the position of top rabbinic leaders on the subject, it is clear that a great number of sincere believers of the Jewish faith could maintain unease about how GM foods and spiritualism may collide.

#### *D. The Buddhist Perspective*

Buddhism differs from the other religious tenets discussed above in that it

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83. Laurie Zoloth, “When You Plow the Field, Your Torah is with You.” *Genetic Modification and GM Food in the Jewish Tradition(s) in ACCEPTABLE GENES? RELIGIOUS TRADITIONS AND GENETICALLY MODIFIED FOODS* 81, 84 (Conrad G. Brunk & Harold Coward eds., 2009).

84. *Id.*

85. *Id.* at 85.

86. *See id.* at 87.

87. *Id.*

88. *Id.* at 90.

89. *Id.* at 92.

90. *Id.* at 92–93.

requires a vegetarian diet, prohibiting consumption of all animal products.<sup>91</sup> In 1996, the Dharma Realm Buddhist Association (DRBA) released a resolution declaring: “[G]enetic engineering of food is not in accord with the teachings of Buddhism. Buddhism considers genetic engineering of foods to be unwarranted tampering with the natural patterns of our world at the most basic and dangerous levels.”<sup>92</sup> The DRBA belief is that genetic modification fundamentally alters DNA, making the created organisms unnatural and therefore problematic to their reading of Buddhist teaching.<sup>93</sup>

As with Christian, Muslim, and Jewish ethics, there is no single understanding of what, if any, dietary restrictions must be adhered to in order to follow the religion appropriately. For example, “Asian Buddhists . . . are not inclined to see a man-made creation as something competing with a ‘good’ nature.”<sup>94</sup> Once again, differences in beliefs among a single religious faith do nothing to detract from the truth that those who *do* hold sincere religious beliefs mandating dietary restrictions have a legitimate reason to perceive the status of GM food as a material fact in their purchasing decisions.

#### IV. LIMITATIONS ON FIRST AMENDMENT RESTRICTIONS

##### A. Regulation of Commercial Speech

The First Amendment to the U.S. Constitution famously reads: “Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech[.]”<sup>95</sup> Despite the seeming absoluteness of the phrasing, there is an established understanding that these freedoms can be subject to certain limitations.<sup>96</sup> With regard to commercial statements, the freedom of speech is limited in part by the “Central Hudson Test.”<sup>97</sup>

The Central Hudson Test is an analysis of commercial speech that consists

91. Jones, *supra* note 8.

92. Ron Epstein, *Buddhism and Measure H: Banning the Growing and Raising of Genetically Modified Organisms in Mendocino County* (Feb. 14, 2004), <http://online.sfsu.edu/rone/GEessays/BuddhismH.htm>.

93. *Id.*

94. Jens Schlieter, *No Buddhist Hard Line on Stem Cells*, BELIEFNET, <http://www.beliefnet.com/News/Science-Religion/2004/04/No-Buddhist-Hard-Line-On-Stem-Cells.aspx#> (last visited Oct. 14, 2015).

95. U.S. CONST. amend. I.

96. *See, e.g.*, *Schenck v. U.S.*, 249 U.S. 47, 52 (1919) (“The most stringent protection of free speech would not protect a man in falsely shouting fire in a theatre and causing a panic.”).

97. *See id.*

of four elements. To be protected from over-burdensome regulation by the Constitution, the commercial speech must first be lawful and not misleading.<sup>98</sup> If so, the analysis next considers whether the government's interest in regulating the commercial speech is substantial.<sup>99</sup> If the government's interest in regulation is substantial, there must be proof that the desired regulation "directly advances the governmental interest asserted, and whether it is not more extensive than is necessary to serve that interest" in order to be sustained.<sup>100</sup>

A 1996 case challenging a Vermont statute requiring mandatory labeling for dairy products which were "treated with a synthetic growth hormone" is instructive in determining whether a requirement of mandatory labeling for GM foods could be maintained.<sup>101</sup> While finding that the commercial speech was lawful and not misleading, the court in *International Dairy Foods Association v. Amestoy* was forced to conclude that Vermont's alleged interest, providing information to sate consumer curiosity, was not a *substantial* interest.<sup>102</sup> Under the current FDA standards, which were already in place by 1996, this conclusion was correct; however, assuming *arguendo* that the court had ruled otherwise, would the Vermont statute meet the final two requirements of the Central Hudson Test?<sup>103</sup>

If the consumer's right to know was viewed as a substantial interest, the court would next consider whether the regulation requiring labeling directly advances that interest and whether the regulation was more extensive than necessary.<sup>104</sup> It is readily apparent that a labeling requirement would advance the consumer's desire for information.<sup>105</sup> Where the majority did not reach the question, the *Amestoy* dissent considered whether the regulation was more extensive than necessary, arguing that the dairy producers' interest in *not* providing factual information is minimal.<sup>106</sup> "The application of these principles to the case at bar yields a clear message . . . regulations designed to prevent the flow of [accurate, non-misleading, relevant] information are disfavored; regulations designed to provide such information are not."<sup>107</sup> Thus, if the *Amestoy* court had viewed the consumer's right to know as a substantial interest, the labeling requirement for milk treated with

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98. *Id.*

99. *Id.*

100. *Id.*

101. *See Int'l Dairy Foods Ass'n v. Amestoy*, 92 F.3d 67 (2d Cir. 1996).

102. *Id.* at 73.

103. *See id.*

104. *Id.* at 72.

105. *See id.*

106. *Id.* at 81.

107. *Id.*

growth hormones likely would have remained in effect.<sup>108</sup> This is directly analogous to the GM food labeling debate.

Moreover, it is necessary to keep in mind that an administrative agency's interpretation of its enabling statute does not receive deference where Congress has taken a definitive stance on the issue.<sup>109</sup> Where Congress has not directly addressed an issue, however, courts must defer to the interpretation of administrative agencies only so long as such interpretation is "based on a permissible construction of the statute."<sup>110</sup> Therefore, the actual holding of *Amestoy*<sup>111</sup> is correct only as long as the FDA itself continues to interpret consumer interest as falling short of materiality; were the FDA to reverse course, or were Congress to intervene, the court's holding would be overruled.<sup>112</sup> In short, the court's holding rests not on the letter of the law, but instead on the whims of the FDA.

### B. Speech Regulation and the Establishment Clause

Due to the fact that freedom is guaranteed by the First Amendment to the U.S. Constitution, it would seem apparent that laws meant to preserve that freedom would be constitutionally acceptable, yet this is not the case. To effectuate the careful balance of interests which emerge when speech is regulated for the benefit of religious belief, the Supreme Court has adopted a method of analysis known colloquially as "The Lemon Test."<sup>113</sup>

The Lemon Test derives from *Lemon v. Kurtzman*, a federal challenge to state statutes granting funding to church-sponsored schools on the basis that these statutes violated the Establishment Clause of the First Amendment.<sup>114</sup> The Supreme Court reasoned that "the Establishment Clause was intended to afford protection . . . [against] 'sponsorship, financial support, and active involvement of the sovereign in religious activity.'"<sup>115</sup> To determine whether a statute effectuates any of those evils, the Court adopted a three-part test.<sup>116</sup> To begin, all statutes must have a secular purpose.<sup>117</sup> Next, "its principal or primary effect must be one that

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108. *See id.*

109. *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842-43 (1984).

110. *Id.*

111. *See Amestoy*, 92 F.3d at 74.

112. *See Chevron, U.S.A., Inc.*, 467 U.S. at 842-843.

113. *See Lemon v. Kurtzman*, 403 U.S. 602 (1971).

114. *Id.* at 606.

115. *Id.* at 612; *Walz v. Tax Comm'n of City of N.Y.*, 397 U.S. 664, 668 (1970).

116. *Lemon*, 403 U.S. at 612-13.

117. *Id.* at 612.



neither advances nor inhibits religion.”<sup>118</sup> Any statute that meets the first two requirements must also avoid entangling government with religion in an excessive way.<sup>119</sup>

Would a labeling requirement for GM foods based on the consumer’s right to know for religiously motivated reasons pass the strictures of the Lemon Test, or would it be a violation of the Establishment Clause? The secular legislative purpose of a labeling requirement could be framed as an attempt to satisfy the curiosity of consumers (“consumer interest”). Far from advancing or inhibiting religion, the primary purpose of a GM labeling requirement is providing information to all consumers. As to the final element of the analysis, the Court found that the statutes at issue in *Lemon* were likely to lead to “vast governmental suppression, surveillance, or meddling in church affairs.”<sup>120</sup> This kind of entanglement in the province of the church is unlikely to result from mandatory GM labeling—to enact a labeling law, the government would not need to know the specifics of church teachings, and the church would not have any effect on government action beyond lobbying for a change in policy. Each of these elements is discussed in greater detail below.

#### 1. *Is Consumer Interest a Legitimate Purpose?*

Throughout this Note, there has been discussion of the consumer’s “right to know” with regard to GM food labeling. However, for advocates of GM food labeling, there is a hurdle to overcome in the fact that “there is no fundamental right-to-know found within the U.S. Constitution.”<sup>121</sup> Nevertheless, consumer interest was considered sufficient to require mandatory labeling by the FDA prior to its 1992 shift in policy.<sup>122</sup> Because Congress has not expressed an opinion on the issue, a return to the pre-1992 standards by the FDA would reestablish consumer interest as a legitimate, secular purpose for GM labeling.

It must be noted that, strictly speaking, the text of the Court’s decision in the *Lemon* analysis requires a secular purpose alone without consideration of whether that purpose is sufficient for the statute to be sustained.<sup>123</sup> For example, in *Romer*

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118. *Id.* at 612–13; *Bd. of Educ. of Cent. Sch. Dist. No. 1 v. Allen*, 392 U.S. 236, 243 (1968).

119. *Lemon*, 403 U.S. at 612–13; *Bd. of Educ. of Cent. Sch. Dist. No. 1*, 392 U.S. at 243.

120. *Lemon*, 403 U.S. at 634.

121. Carl R. Galant, *Labeling Limbo: Why Genetically Modified Foods Continue to Duck Mandatory Disclosure*, 42 HOUS. L. REV. 125, 149 (2005).

122. See generally Irradiation in the Production, Processing, and Handling of Food, 51 Fed. Reg. 13376–01, 13388 (Apr. 18, 1986) (codified at 21 C.F.R. pt. 179 (2015)).

123. See *Lemon*, 403 U.S. at 612.

*v. Evans*, the Supreme Court found that a state constitutional amendment burdening homosexuals was enacted with the purpose of giving legal weight to discriminatory animus.<sup>124</sup> Although the Court did not utilize the Lemon Test in the *Romer* decision, the state constitutional amendment at issue in that case would likely survive the first element: discriminatory animus is an ostensibly secular purpose.<sup>125</sup> Nonetheless, because “[i]t is not within our constitutional tradition to enact laws of this sort”, the secular purpose is insufficient to allow the statute to remain in effect.<sup>126</sup>

Similarly, the *Amestoy* court, in finding the labeling requirement for growth hormone usage in dairy products unconstitutional, stated, “We do not doubt that Vermont’s asserted interest, the demand of its citizenry for such information, is genuine; reluctantly, however, we conclude that it is inadequate.”<sup>127</sup> Although consumer interest was ultimately viewed as insufficient to allow the statute to remain in effect, the court nonetheless indicated that it was a legitimate purpose.<sup>128</sup> Therefore, considered just in the context of the first prong of the Lemon Test, consumer interest is a legitimate, secular purpose supporting a statute’s constitutionality.

## 2. *Does the Primary Effect of GM Food Labeling Advance Religion?*

The holding in *Lemon* appears to suggest that answering this question depends on whether the primary intent of enacting legislation is to advance religion.<sup>129</sup> Advancement is sometimes referred to by courts as “endorsement.” What constitutes endorsement of religion?

The question is addressed in the 1984 case *Lynch v. Donnelly*.<sup>130</sup> There, the majority stated that endorsement is activity related with religion which “sends a message to nonadherents that they are outsiders, not full members of the political community, and an accompanying message to adherents that they are insiders, favored members of the political community.”<sup>131</sup> Merely requiring that GM food be labeled could not have this effect.

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124. *Romer v. Evans*, 517 U.S. 620, 634 (1996).

125. *See id.*

126. *Id.* at 633.

127. *Int’l Dairy Foods Ass’n v. Amestoy*, 92 F.3d 67, 73 (2d Cir. 1996).

128. *See id.*

129. *See Lemon*, 403 U.S. at 613 (“Inquiry into the legislative purposes of the . . . statutes affords no basis for a conclusion that the *legislative intent* was to advance religion”) (emphasis added).

130. *See Lynch v. Donnelly*, 465 U.S. 668 (1984).

131. *Id.* at 688.

Additionally, the *Lemon* Court spoke favorably of Justice Harlan's concurring opinion in *Walz v. Tax Commission of the City of New York*.<sup>132</sup> In his concurrence, Justice Harlan wrote that "[t]he fullest realization of true religious liberty requires that government neither engage in nor compel religious practices, that it effect no favoritism among sects or between religion and nonreligion, and that it work deterrence of no religious belief."<sup>133</sup> Yet again, a system of GM food labeling would accomplish none of the negative consequences Justice Harlan describes—to the contrary, non-labeling works to deter religious belief by making adherence more difficult.<sup>134</sup>

Finally on this point, the *Lemon* Court noted that separation between church and state is not absolute; some interaction between religion and government is inevitable as a matter of course.<sup>135</sup> One example that the Court provides where religion and government intersect is in the field of business and zoning regulations.<sup>136</sup> Some zoning, at its core, is an arbitrary decision regarding how to divide spaces: hypothetically, is there any reason that a residence could not inhabit a space zoned for businesses, or that a parking lot could not be larger? It could be argued that GM labeling is similar, inasmuch as consumer interest, despite seeming arbitrary, would control the contours of the law.

### 3. *Is a Labeling Requirement Excessive Government Entanglement with Religion?*

To determine whether government's mingling with religion is excessive, the *Lemon* Test directs a fact-finder to consider "the character and purposes of the institutions that are benefited, the nature of the aid that the State provides, and the resulting relationship between the government and the religious authority."<sup>137</sup> However, legislation does not fail the *Lemon* Test because it was motivated only *in part* by a religious purpose.<sup>138</sup>

An example of legislation that is motivated by religious purpose is kosher fraud laws, i.e. laws that hold food sellers accountable for falsely claiming that their products have been deemed kosher within Jewish guidelines. The "problem appears to be that under kosher fraud laws the state must make a determination that

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132. *Lemon*, 403 U.S. at 615.

133. *Walz v. Tax Comm'n of N.Y.C.*, 397 U.S. 664, 695 (1970); *Sch. Dist. of Abington Twp., Pa. v. Schempp*, 374 U.S. 203, 305 (1963).

134. *See Walz*, 397 U.S. at 695.

135. *Lemon*, 403 U.S. at 614.

136. *Id.*

137. *Id.* at 615.

138. *Wallace v. Jaffree*, 472 U.S. 38, 56 (1985).

the food in question is not kosher, and courts, by ruling on the state's determination, become party to this state action inquiring into religious matters."<sup>139</sup> This issue does not appear in the case of GM food labeling—no inquiry into religious matters is necessary—therefore, a labeling requirement does not appear to be an excessive entanglement with religion.

Furthermore, religious institutions maintain their tax-exempt status so long as “no *substantial part* of the activities . . . is carrying on propaganda, or otherwise attempting, to influence legislation.”<sup>140</sup> When does lobbying activity related to legislation become a substantial part of a religious institution's activity? Inferring from the rulings in two Internal Revenue Service (IRS) cases, the answer seems to be that somewhere between five to fifteen percent of a religious institution's time can be dedicated to lobbying activities, although the IRS has not created a bright-line rule.<sup>141</sup> With that said, religious entities need not worry because “not one church has ever lost either its IRS tax-exempt letter ruling or its tax-exempt status for engaging in too much lobbying.”<sup>142</sup> Consequently, it could not be said that religious interest in GM food labeling would be a case of *religion* excessively entangling itself with *government*, either.

#### V. SHOULD A “RIGHT TO KNOW” BASED ON RELIGIOUS BELIEF BE CONSIDERED MATERIAL?

##### A. Information Overload

There are some legitimate reasons that the consumer's “right to know” should remain non-material in deciding whether to mandate GM food labeling. One of those reasons is the danger of information overload. If the consumer's “right to know” were enough to mandate labeling, the amount of information requested could very well be immense. For example, “with respect to cattle, consumers might reasonably evince an interest in knowing which grains herds were fed, with which medicines they were treated, or the age at which they were slaughtered.”<sup>143</sup>

However, a supporter of making a change in the definition of materiality

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139. Stephen F. Rosenthal, *Food for Thought: Kosher Fraud Laws and the Religion Clauses of the First Amendment*, 65 GEO. WASH. L. REV. 951, 972 (1997).

140. 26 U.S.C. § 501(c)(3) (2012) (emphasis added).

141. MATHEW D. STAYER, PASTORS, CHURCHES, AND POLITICS: WHAT MAY PASTORS AND CHURCHES DO? (2004), available at [http://www.lc.org/resources/pastors\\_churches\\_politics.htm](http://www.lc.org/resources/pastors_churches_politics.htm).

142. *Id.*

143. Int'l Dairy Foods Ass'n v. Amnesty, 92 F.3d 67, 74 (2d Cir. 1996).

might question what harm there is in giving consumers a great deal of information.<sup>144</sup> Additionally, the suggestion that consumers would want absurd information is not borne out by reality: “As of yet, no bills have been proposed, no lawsuits have been filed, and no petitions have been drafted, to compel slaughter age labeling.”<sup>145</sup> Finally, mandated labeling might give producers pause when deciding what to include in their products; this would be a positive development for those opposed to the use of genetic modification.<sup>146</sup>

### *B. Restriction of Liberty*

By declaring a “right to know”, it could be argued, supporters of GM food labeling are adding an impediment to the buyer-seller relationship. If buyers want additional information, “they can demand it, and sellers can decide whether to provide the information, refuse to provide the information, or provide the information only in exchange for additional consideration (i.e., a higher purchase price).”<sup>147</sup> To prevent transactions where GM food labeling is not included is to restrict both buyers and sellers from doing business as they desire.<sup>148</sup>

But on the other hand, the government has the right to create legislation that inhibits the speech of commercial interests so long as it meets the requirements of the Central Hudson test. The government represents the people, therefore consumer religious concerns are a legitimate governmental interest that it has the right to pursue; liberty is restricted only insofar as producers are restricted from hiding material information from consumers. That can hardly be considered a bad thing.

### *C. Cost-Benefit Analysis*

Not all consumers share religious beliefs for which the ingestion of GM food may implicate a spiritual struggle. “From a fairness standpoint, it seems more appropriate to allocate the costs of informing consumers regarding bioengineered status to those consumers who actually value the information—that is, those who are willing to pay at least some premium for non-GM foods.”<sup>149</sup> If GM food labeling is required, the cost of this labeling is placed on those who actually *will* purchase GM foods; this seems unjust.<sup>150</sup>

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144. Nauheim, *supra* note 35, at 130.

145. *Id.*

146. *Id.*

147. Peters & Lambert, *supra* note 3, at 154-55.

148. *Id.*

149. *Id.* at 158.

150. *Id.*

However, there is evidence that consumers prefer non-GM foods, so it is reasonable to predict that mandatory labeling would lead to slightly lower prices for GM foods and a rise in price for non-GM foods.<sup>151</sup> “Given the relative size of the organic and conventional foods markets, the advantages would likely be focused on the relatively smaller number of organic producers, while the disadvantages would probably be minimal and spread out among a large number of conventional producers.”<sup>152</sup> In short, the cost of mandatory labeling will be spread out among consumers so that any unfairness will be slight.

## VI. CONCLUSION

While there remain questions about how a labeling regime could be effectively put into practice, and whether materiality should be limited to religious and cultural beliefs regarding the ingredients or anything the consumers want to know about (e.g. the political ideology of the company), there is evidence to suggest that the definition of “materiality” adopted by the FDA is malleable. It is notable that the FDA’s 1992 policy shift with regard to materiality has not been officially adopted by Congress; although it has been followed in some high-profile cases, those decisions are not controlling on the FDA.

A change in policy with regard to the definition of “materiality” or mandatory labeling generally is something most likely to be accomplished through Congressional action. The courts are bound by the FDA’s interpretation of “materiality” and the FDA appears stubborn in its conclusion that “materiality” relates to issues of safety alone.

Most discussions on the issue consider religious belief little more than a preference, but that approach is mistaken. In actuality, “[t]hese interests rise to the level of fundamental rights of religious and moral conscience, to which liberal democratic society should ascribe special weight and respect.”<sup>153</sup> Because of the important role that religious belief plays in the United States generally and in individuals’ lives specifically, Congress and the FDA should give serious consideration to revising the standard for “materiality” in the FDCA.

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151. Clark Wolf, *Labeling Genetically Engineered Foods: Rights, Risks, Interests, and Institutional Options* in LABELING GENETICALLY MODIFIED FOOD, THE PHILOSOPHICAL AND LEGAL DEBATE 178, 179 (Paul Weirich ed., 2007).

152. *Id.*

153. Conrad G. Brunk, et al., *Regulatory and Innovation Implications of Religious and Ethical Sensitivities Concerning GM Food*, in ACCEPTABLE GENES? RELIGIOUS TRADITIONS AND GENETICALLY MODIFIED FOODS 231, 253 (Conrad G. Brunk & Harold Coward eds., 2009).