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Canada, US-EU Beef Hormone Dispute

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Synonyms

Consumer preferences; Growth-promoting hormones; Labeling; Precautionary principle; Risk assessment; Sanitary and Phytosanitary Agreement; WTO dispute panel

Introduction

Citing public anxieties about the use of hormones in livestock production in the 1980s, the European Union (EU) banned the nontherapeutic use of a number of synthetic and naturally occurring hormones in domestic beef production and subsequently banned imports of beef produced using these productivity-enhancing hormones. The US and other beef-exporting nations such as Canada argued that the import ban was not justified on scientific grounds and was instead disguised protectionism. Thus began a long-running and often acrimonious trade dispute between the EU and the USA along with Canada. The trade dispute highlights the challenges of dealing with consumer suspicions of a technology to all intents and purposes deemed "safe," the conflict between a precautionary principle approach to technology versus a science-based risk assessment approach, and the challenges for the international trade architecture in distinguishing between policies motivated by nefarious protectionism and genuine consumer concerns. At the heart of the ethical dilemma posed by the US-EU beef hormone dispute is the reality that the World Trade Organization (WTO) was not set up to deal with consumers' demands for protection (who are usually expected to benefit from trade liberalization) – its primary focus traditionally has been demands for protection from domestic producers. The beef hormone dispute proved to be a challenging first test of the WTO dispute settlement mechanism.

This essay outlines the origins of the US-EU beef hormone dispute and traces the turbulent history of the dispute through various WTO rulings, responses, and outcomes. The chief arguments put forth by the EU in defense of its beef import ban and by the USA and Canada in challenging the import ban are examined. The ethical issues raised by the trade dispute and potential solutions are explored with reference to key literature on the topic. The essay concludes by discussing the implications for trade policy of the clash between a scientific rationality and a social rationality approach to new technologies.

P.B. Thompson, D.M. Kaplan (eds.), *Encyclopedia of Food and Agricultural Ethics*,
DOI 10.1007/978-94-007-0929-4,

Origins of the Beef Hormone Dispute

Growth-promoting hormones are commonly used internationally to enhance the production efficiency of livestock. The beef hormone trade dispute revolved around six hormones that were licensed for use in North America but banned in the European Union: estradiol-17β (also called oestradiol-17), progesterone, testosterone, melengestrol acetate, trenbolone acetate, and zeranol. The first three are produced naturally in animals and humans, while the others are synthetic hormones (Kerr and Hobbs 2005). The three naturally occurring hormones are permitted for animal therapeutic purposes in the EU if used under veterinary supervision.

The EU hormone ban arose from growing public anxieties over the use of hormones in livestock production in the late 1970s and early 1980s (Roberts 1998). In the late 1970s, Italian schoolchildren began exhibiting signs of premature development which was believed to be linked to the use of illegal growth hormones in veal or poultry served in school lunches. A public furore ensued, with further investigations discovering residues of an illegal growth promotant in samples of veal-based baby food sold in Italy. These widely publicized "hormone scandals" prompted veal boycotts across a number of European countries and led to official proposals to ban the use of growth-promoting hormones in cattle production. The first European Commission Directive partially banning the use of growth hormones was passed in 1981, with a stronger ban on their use both domestically and in imported beef adopted in 1985 – subsequently annulled following a European Court of Justice challenge – and then readopted in 1988 (Roberts 1998).

Following the trade ban, exports of beef products from the USA and Canada to Europe fell precipitously, with US beef exports falling from 76,000 t in 1982 to just 4,500 t by 1990 (Kastner and Pawsey 2002). The value of lost exports from the USA and Canada has been estimated at over 100 million dollars (Roberts 1998). The USA, Canada, and other beef-exporting nations objected to the ban on imports of beef, arguing that an overwhelming scientific consensus existed on the safety of beef produced using approved growth hormones. In addition to almost 50 years of scientific study, it was argued that the long-term use of hormones in beef production had been widespread in a number of countries for decades with no known food safety or health consequences. In the view of the USA and Canada, the absence of a scientific basis for the import ban pointed toward disguised protectionism as the true underlying motivation. Beef producers within the EU were placed at a significant competitive disadvantage vis-à-vis producers in the USA and Canada since they no longer had access to the productivity-enhancing hormones as an input to beef production. Furthermore, there were suspicions that the domestic ban on hormone use in the EU may also have been motivated by a desire to reduce the increasingly burdensome costs of the European Common Agricultural Policy (CAP) by lowering productivity and thus reducing aggregate beef supply (Roberts 1998).

For its part, the EU maintained that an appropriate level of protection was a societal value judgment and that it had the right to adopt a precautionary approach seeking a "zero risk" level if it so chose. It claimed that scientific questions still remained regarding the long-term effects of hormone use, as well as possible synergistic effects with hormones taken for medical purposes. Apparent widespread consumer opposition to the use of the technology also factored into the EU's position, creating a political challenge for decision makers. The tendency for politicians to exercise "political precaution" when faced with public pressure to act even when the scientific evidence suggests little evidence of a problem has been recognized in other contexts (see Kerr 2009).

The WTO Dispute Settlement Mechanism

Protracted bilateral negotiations between the parties failed to resolve the dispute, and in the late 1980s, the USA and the EU entered a period

of retaliatory and counter-retaliatory trade measures. The existing mechanisms within the General Agreement on Tariffs and Trade (GATT) architecture proved unable to resolve this dispute. In 1995, however, the new World Trade Organization (WTO) came into existence, bringing with it strengthened trade rules around the use of trade restrictions for sanitary and phytosanitary reasons, as well as a new dispute settlement mechanism.

The WTO Sanitary and Phytosanitary (SPS) Agreement allows the imposition of trade barriers in instances where a country determines that imports may pose a threat to plant, animal, or human health. An SPS trade measure, however, must have a sound scientific rationale. In the cases of suspected SPS hazards, where a country claims there is insufficient information for a full risk assessment, the SPS Agreement explicitly states that precautionary trade measures should be temporary and any country invoking SPS measures should actively seek to fill in the gap in scientific information (Kerr and Hobbs 2005). The SPS Agreement defers to various international scientific bodies for a scientific consensus on acceptable levels of risk, including the Codex Alimentarius Commission in the case of food. In 1995 a Codex Committee voted narrowly in favor of standards governing the continued use of five of the six hormones (Kastner and Pawsey 2002). The USA and Canada argued that the EU beef hormone ban was in violation of the SPS Agreement given the lack of scientific evidence of a threat to health, and in 1996 both the USA and Canada applied for WTO dispute panels to adjudicate the EU hormone ban.

The WTO panel rulings followed in 1997, concurring with the USA and Canada that the EU ban on beef treated with growth-promoting hormones was inconsistent with its obligations under the SPS Agreement. The WTO Appellate Body was subsequently asked to review the dispute panels' decisions and in a subsequent ruling in January 1998 upheld the original WTO dispute panel rulings, finding that the EU had not produced scientific evidence to support the claim that the ban was justified (Roberts 1998). While the EU initially indicated that it would comply with the ruling, a protracted period of negotiation ensued between the EU and the USA and Canada regarding the time frame for implementation, with the matter eventually being referred to a WTO arbitrator. Ultimately the period of time required for the EU to come into compliance expired in May 1999 at which point the EU indicated that it would not comply with the WTO ruling. This fraught first test of the newly established WTO dispute panel settlement mechanism threatened to undermine the credibility of the entire WTO dispute settlement architecture with repercussions that reverberated far beyond the economic significance of the loss in trade represented by the beef hormone dispute itself.

Refusal to comply with a dispute panel ruling, while expected to be rare, had nevertheless been allowed for by the framers of the WTO. A country that chooses not to comply can either offer compensation to the affected party (or parties) or accept retaliation against alternative products up to the value of the trade affected by the "illegal" trade measure. As Kerr and Hobbs (2005) indicate, countries rarely choose the compensation option because it is set to the gross value of the trade loss, while retaliation only results in a net value of trade loss since the goods retaliated against can find alternative markets. The EU opted for retaliation. Consequently the USA and Canada imposed 100 % ad valorem tariffs on a range of agricultural commodities concentrated on politically influential countries in the EU: primarily against exports from France, Germany, Italy, and Denmark (the latter being a large livestock exporter). Kerr and Hobbs (2005) detail the initial retaliatory product list, while Johnson and Hanrahan (2010) chart the changes in these product lists over time. Among others the affected products included meat of bovine animals, meat of swine, Roquefort cheese, onions, cucumbers, tomatoes, truffles, mustard, soups, hams, chocolate, jams, yarn, oats, sausages, and certain juices.

Retaliation is widely regarded as counterproductive to the fundamental purpose of the WTO since it means putting in place additional trade barriers. Retaliation, while imposing costs on the EU, could do little to ease the economic burden on the affected beef industries in the USA and

Canada. The result is a loss in economic welfare: consumers in the USA and Canada pay higher prices for a range of food products, while producers in innocent industries in the EU suffer from the imposition of tariffs on their exports and lost market share. To further increase the pressure on the EU to review its position on the hormone ban, the USA threatened to employ a so-called carouseling strategy whereby the list of retaliatory products is frequently changed. Intermittently and randomly changing the imposition of retaliatory tariffs across different products is a more effective retaliatory strategy because it introduces greater levels of instability for exporters in the affected country and should increase internal political pressure to comply with the WTO ruling (see Kerr and Hobbs 2005, for a more detailed discussion of the carouseling strategy). For its part, the EU appeared to take the threat of carouseling seriously and has attempted to have the practice outlawed as a WTO retaliatory measure.

Over the following years, the trade dispute remained unresolved, with the EU maintaining its import ban on beef produced using growth hormones and the USA and Canada maintaining their retaliatory tariffs. The EU continued to commission research studies in an effort to garner scientific support for its hormone ban. In 2003, based on a risk assessment report suggesting that estradiol-17ß may be carcinogenic, the EU issued a new directive permanently banning estradiol-17ß and provisionally banning the other five hormones while further studies were undertaken. Claiming that this now placed it in compliance with its WTO obligations, in 2004, the EU requested WTO consultations to have the USA remove its retaliatory trade measures. In 2005 the EU initiated new WTO dispute settlement proceedings against the USA and Canada regarding their continued retaliatory trade sanctions. A March 2008 WTO panel ruling found all three parties to be at fault: the EU for still failing to present sufficient scientific evidence to justify the import ban and the USA and Canada for procedural violations in maintaining their trade sanctions. The WTO Appellate Body subsequently heard appeals by all three parties to the earlier dispute panel ruling and in October 2008 issued a ruling allowing for continued trade sanctions against the EU but also allowing the EU to continue its ban on beef imports treated with growth hormones. This apparent mixed ruling did little to resolve the escalating dispute between the parties, and following US announcements in late 2008 and early 2009 signaling an increase in retaliatory tariffs on a wider range of products, the EU prepared to file a new WTO challenge against the USA and Canada regarding their use of retaliatory measures (Johnson and Hanrahan 2010).

Bilateral negotiations continued, and in May 2009, the USA and the EU signed a memorandum of understanding (MOU) outlining an agreement to resolve this 20-year trade dispute through a series of phased-in measures allowing expanded market access into the EU at zero duty for beef produced without growth-promoting hormones (so-called high-quality beef), balanced by a phased reduction in the removal of the US retaliatory import duties. Canada and the EU developed a similar MOU. The amounts of the US and Canadian (and third country) beef allowed into the EU by this resolution of the trade dispute are remarkably small: phased-in duty-free access for 48,200 t of non-hormone-treated beef (Council of the European Union 2012). In return the USA and Canada suspended their retaliatory import duties. Nevertheless, these agreements appear to have drawn to a close a protracted and bitter trade dispute that ranged over two decades and at times threatened the credibility of the entire WTO dispute settlement mechanism. The ultimate outcome appears to have been a reluctant acknowledgement by the USA and Canada that the EU was not going to lift its ban on hormone-treated beef regardless of the weight of scientific evidence to the contrary and that further retaliatory trade measures would only serve to escalate trade tensions at a time when closer trade ties were being contemplated (an EU-Canada Free Trade Agreement is currently under negotiation; an EU-US trade and investment pact is being contemplated) (Viju and Kerr 2011; ICTSD 2012).

Issues Raised by the Dispute

Embedded in the beef hormone dispute are a number of controversial, ethical, social, and policy dilemmas: a social rationality approach to policy decisions – including emphasis on consumers' "right-to-know" and the use of the precautionary principle as a decision tool – versus a scientific rationality approach to policy decisions; challenges in distinguishing between genuine public concerns versus nefarious protectionism disguised as public interest; foregone benefits, the loss in economic welfare from trade barriers and retaliatory measures; and whether labeling of beef would have been a viable solution.

At its heart, the beef hormone dispute reflected a fundamentally different approach to policy decisions at the technology-safety interface in the EU relative to the USA and Canada. This difference is also manifest in other technology contexts, most notably the regulation of genetically modified foods. While risk analysis plays a central role in both policy processes, science is rarely definitive: one cannot "prove" that something is 100 % safe. A *scientific rationality* underpins the US and Canadian approach to new technologies, while the EU has tended to adopt a *social rationality* stance (see Isaac (2002) and Isaac and Hobbs (2002), for a detailed discussion of scientific versus social rationality in a policy context).

Underlying scientific rationality as the arbiter of policy decisions is a basic belief in technological progress, a consideration of both recognized and hypothetical risks, a focus primarily on safety and health considerations in risk assessments, an innocent-until-proven-guilty approach to the burden of proof, an acceptance of minimum risk tolerance levels, a strictly scientific interpretation of the precautionary principle, and the use of mandatory labeling confined to circumstances where hazards may exist (Isaac 2002). In contrast, technological precaution lies at the heart of a social rationality stance, with consideration not only of recognized and hypothetical risks but also of speculative risks, the burden of proof requirements resemble a guilty-until-proven-innocent approach, risk tolerance levels favor zero risk, there is a social interpretation of the precautionary principle, and mandatory labeling is utilized more broadly based on consumers' right-to-know (Isaac 2002). These divergent regulatory trajectories set the scene for different regulatory decisions on the approval of new technologies and processes (or the removal from the market of existing technologies and processes as new information emerges). Asymmetric and asynchronous approvals pose a significant challenge in international markets, ultimately leading to trade disputes.

The beef hormone dispute highlighted the challenges in dealing with trade barriers put in place due to apparent consumer concerns about a product or a technology. The challenges are twofold: first, distinguishing between genuine consumer concerns and nefarious protectionism, and second, even given genuine consumer anxiety, how should the trade policy architecture respond if the balance of scientific evidence suggests little to no risk? One might expect differences in quality perceptions across counties for cultural, historical, and social reasons (Bureau et al. 1998). A number of studies have examined European consumer preferences for beef produced with and without the use of growth-promoting hormones, as well as the extent to which these preferences differ across different countries (see, e.g., Lusk et al. 2003; Alfnes 2004; Tonsor et al. 2005). Using stated preference techniques, these studies find that consumers tend to discount hormone-treated beef and express a preference for hormone-free beef. The strength of preferences, however, varies among consumers and often across countries. For example, Lusk et al. (2003) found that French consumers were willing to pay relatively more for hormone-free beef than consumers in the UK, Germany, and the USA, and although consumers in the latter three countries did exhibit a positive willingness-to-pay (WTP) for hormone-free beef, there was no statistical difference between them. Within-country preferences also differed: heterogeneity in consumer attitudes toward hormone-treated vs. hormone-free beef was found to be stronger in the USA and the UK, while consumers

in Germany and France tended to exhibit more homogenous preferences (Lusk et al. 2003). In a separate study, Tonsor et al. (2005) find that consumers from the UK, France, and Germany exhibit distinctly different preferences toward hormone-free beef.

Hormone-treated beef is a credence attribute, meaning that its presence cannot be detected either before purchase or after consumption. In the absence of labeling, credence attributes create quality uncertainty in markets. Consumers who regard hormone-treated beef as lower quality, and who are unable to distinguish between hormone-treated and hormone-free beef, will reduce their demand for beef given quality uncertainty. The loss in welfare due to an adverse quality effect must be balanced against the potential gain in welfare from a technology that enhances productivity and lowers costs (a similar argument pertains to genetically modified food; see Gaisford et al. 2001, Chap. 4). Bureau et al. (1998) show that trade liberalization in the presence of information asymmetry can be welfare reducing in the absence of labeling. To avoid these welfare losses, labeling is frequently proposed as a solution to information asymmetry. One of the potential solutions to the EU-US/Canada beef hormone dispute, therefore, would have been to allow production and importation of hormone-treated beef within the EU and to identify through labeling either hormone-free or hormone-treated beef.

While it sounds like a simple solution, in reality labeling raises some thorny policy questions. Should labeling be mandatory or voluntary? Should hormone-free beef be labeled or should labeling be used for hormone-treated beef? A voluntary hormone-free label should be welfare enhancing if the benefits (removal of quality uncertainty) outweigh the costs of implementing and enforcing the label. If the segregation and labeling costs are prohibitive, however, or if there is widespread cheating (mislabeling of hormone-treated beef as hormone free to capture a market premium), then a voluntary hormone-free label would fail to resolve the quality uncertainty in the market. On the other hand, requiring mandatory labeling of hormone-treated beef introduces further distortions into the market. Since consumers are heterogeneous in their attitudes toward the use of hormones in beef, not all consumers benefit from the additional information, and there are questions over the signal sent by the label. Under WTO rules countries are permitted to introduce mandatory labeling requirements only if foreign products are treated no less favorably than domestic products (Roberts 1998). Labeling for health or safety reasons must have a scientific basis. If requiring the labeling of hormone-treated beef implied a health risk where none existed, then it may have done little to assist consumers in making informed choices and would have discriminated against beef imports from countries where use of productivity-enhancing hormones was standard practice. Whether some consumers have a "right-to-know" regardless of the potential economic costs to other groups in society remains a controversial issue and is apparent in other dilemmas such as animal welfare and genetically modified organisms.

Summary

The beef hormone dispute persisted for more than two decades and proved difficult to resolve despite the existence of the WTO SPS Agreement and the WTO dispute settlement mechanism. At its heart lay divergent approaches to agricultural technologies and the use and interpretation of science-based risk assessments as an arbiter of policy decisions. The balance of evidence suggested little scientific support for a ban on imports of hormone-treated beef on the basis of health risk. This finding was upheld through numerous WTO processes. Yet some European consumers express a clear preference for hormone-free beef. Retaliatory trade measures, meant to force compliance with WTO rulings, introduce further trade distortions in the long run. The ultimate significance of the beef hormone dispute stretches well beyond the economic losses from forgone beef trade and represents a potentially problematic precedent for the international trade policy environment.

Cross-References

- ▶ Food and Agricultural Trade and National Sovereignty
- ▶ Food Boycotts
- ▶ Food Labeling
- ▶ Food Legislation and Regulation: EU, UN, WTO and Private Regulation
- ▶ Food Risks
- ▶ Free Trade and Protectionism in Food and Agriculture
- ▶ The 2003–2006 WTO GMO Dispute: Implications for the SPS Agreement
- ▶ WTO Dispute Settlement and Food and Agricultural Trade

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Cannibalism

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Synonyms

Anthropophagy; Eating humans

Introduction

Cannibalism, or anthropophagy, is the consumption of the flesh of one human by another. The word "cannibalism" itself comes from the Spanish "Canibales" – a name for the Carib tribe in the West Indies thought to engage in ritualistic cannibalism. The term "cannibalism" can also be used more broadly to mean the consumption of

members of one's own species. The Greek-based term "anthropophagy" quite literally means "eating humans," regardless of who (or what) is doing the eating. Historically, a great variety of arguments have been offered against cannibalism, and virtually none in its favor. Nevertheless, reflection on cannibalism raises many very difficult conceptual issues, and few arguments against it are without serious problems.

To assess the arguments against cannibalism, three kinds of cannibalism will be distinguished. The relevance of the natural law tradition to cannibalistic activity will then be discussed. Following this, the relationship between respect for human beings and cannibalism will be explored, as well as the relevance of disgust to morally assessing acts of cannibalism. Finally, cannibalism will be assessed from the point of view of three traditional moral theories (rights-based deontology, utilitarianism, and virtue ethics).

Varieties of Cannibalism

In assessing the morality of cannibalism, three different kinds of cannibalism should be distinguished.

First, cannibalism is sometimes used as part of religious or cultural rituals. The cultural practice of anthropophagy can be called ritualistic cannibalism (or "learned cannibalism"). There have been many reports of groups of people around the world engaging in such ritualistic practice. The aims of such cannibalism vary. Rituals may involve the consumption of one's ancestors as a way of showing respect to them, or it may involve other motivations: the desire for revenge, to crush one's enemy, to eliminate internal or external threats, to magically stave off negative forces, or simply to feast. The indigenous population of Easter Island and Papua New Guinea, to cite two familiar examples, is known to have engaged in various kinds of ritualistic cannibalism. The extent of anthropophagic ritual and practice today is not certain, but the practice undoubtedly continues in some parts of the world.

Cannibalism, when used to prevent starvation and not as a part of a cultural practice, can be called emergency cannibalism (or survival cannibalism). The famous Donner Party of 1846 as well as the Uruguayan rugby team that crashed in the Andes Mountains in Chili in 1972 both engaged in this form of cannibalism. There are also countless accounts of emergency cannibalism as a result of shipwreck. The aim of emergency anthropophagy is, by definition, survival.

A third kind of cannibalism can be called fetish cannibalism. This form of cannibalism is "fetishistic" because it is related to a fetish, often though not always sexual in nature, on the part of the person who engages in cannibalism. In such cases, cannibalism is practiced as a means of fulfilling the desire to consume human flesh. Jeffrey Dahmer is perhaps the most famous case of such cannibalism. Armin Meiwes, who was tried and convicted in German courts in 2002, likewise participated in fetish cannibalism when he killed and consumed Bernd-Jurgen Brandes, who had answered an advertisement Meiwes posted on the Internet seeking a volunteer who wanted to be killed and eaten.

Arguments from Natural Law

Discussions of natural law in the modern era (1600–1800) made frequent use of the figure of the cannibal. Discussion of cannibalism itself was widespread in the nineteenth centruy, largely due to the stories of travelers who had visited places where cannibalism was alleged to occur (Avramescu 2009). Herman Melville's *Moby Dick* provides one literary example of the much discussed figure of the cannibal. Interestingly, however, Melville presents the cannibal (the character Queequeg) as both honorable and worthy of our respect – *not* as a moral monster. In a similar vein, in what is perhaps the most famous essay on cannibalism, Michel de Montaigne (1993) acknowledges the immorality of cannibalism, but also insists that the practices of European nations (involving, e.g., torture) are far worse. While cannibalism may well be barbarous, Montaigne argues, it is no more barbarous than the actions of the so-called "civilized" world. Indeed, Montaigne suggests that it is *less* barbarous.

Many historical reports of cannibalism are now widely regarded as unreliable. Allegations of cannibalism in centuries past were sometimes made to justify the oppression of indigenous peoples or to secure funding to "civilize the savages." It is difficult to know the exact extent to which allegations of cannibalism among indigenous peoples reflected such motivations. Certainly, though, the amount of cannibalism alleged to exist in the world was highly exaggerated throughout the nineteenth century and into the twentieth.

The central argument used against cannibalism in all its forms in the modern period relied on the concept of natural law. According to natural law theory, certain kinds of practices violate the order of the world – an order that is variously conceived as coming from some higher being (God) or as stemming from things like human nature. According to some of the standard arguments, the consumption of members of one's own species among human beings violates this natural order and is therefore immoral. In the modern period, the relationship between cannibalism and natural law is discussed by thinkers as diverse as Hugo Grotius (2009), Samuel Pufendorf (1991), John Locke (1997), Michel de Montaigne (1993), and Thomas Malthus (1999), to name only a few.

Arguments from natural law, however, face significant objections. First, it is very difficult to determine (1) whether or not anything like "natural law" actually exists and (2) what the content of this law actually is. Indeed, cannibalism has sometimes been taken to be evidence against the existence of natural law (Avramescu 2009). Moreover, appeals to natural law frequently articulate one's point of view rather than providing a justification for it. This can be seen when one's only reason for saying that something is wrong is that the thing is "unnatural." Leaving aside how we are to know what things are and are not natural (a thorny issue), it is often contended that claims about what ought to be the case do not follow from facts about what is the case. This is typically called the "is/ought" problem and can be traced back to David Hume. One cannot claim that there shouldn't be cannibalism (an "ought" claim) based on the claim that cannibalism is unnatural (an "is" claim).

One can even argue, however, that cannibalism *is not* unnatural. On one view, anything that natural biological organisms do is itself natural. If this is correct, then cannibalism is as natural as many other cultural practices – marriage, funeral rites, festivals, and so on. Some anthropologists have even argued that cannibalism was common among our evolutionary ancestors.

Thus, the appeal to "unnaturalness" faces two central objections: (1) something may well be morally permissible even if unnatural (this is an implication of the "is/ought" distinction), and (2) cannibalism may not be unnatural.

Appeals to natural law sometimes involve appeals, not to the natural order, but to the will of God. If cannibalism violates the will of God, one standard argument goes, it violates natural law. The difficulties with this view are fairly straightforward: (1) it is impossible to prove that any particular act either is or is not the will of God (there are many possible religious traditions to appeal to, and no definitive argument that one is superior to another), and (2) it is possible, in response to this line of argument, to simply deny the existence of God.

Respect and Cannibalism

Despite arguments against cannibalism based on the doctrine of natural law within religious traditions, many of these very same religious traditions involve at least symbolic cannibalism. The Eucharist, for example, involves the consumption of (a symbol of) the flesh and blood of Christ. One is eating the flesh of another (partial) human, at least symbolically, in communion.

The roots of this practice are shared by more obviously cannibalistic traditions. Cannibalism involves literally incorporating the human being who is eaten. This is sometimes described as a means by which one pays respect to the deceased, allowing him to live on (symbolically) within the bodies of those who survive him. In this respect, ritualized cannibalism has sometimes been a means by which one honors the dead rather than a means by which to

denigrate or disrespect the dead. Similarly, the Eucharist involves the internalization of Christ's flesh as a means to symbolically make Christ a part of oneself.

In the case of ritualistic cannibalism, then, it is simply not clear that there is anything intrinsically disrespectful in *all* anthropophagic cultural activities. If some forms of ritualistic cannibalism are not inherently disrespectful, it follows that cannibalism itself is not inherently disrespectful (i.e., there is at least one kind of cannibalism that is consistent with maintaining respect for the cannibalized).

In the case of emergency cannibalism, it can be argued that no disrespect is intended (though this does not guarantee that disrespect is not present). In emergency cannibalism, after all, one only consumes human flesh to avoid starvation. Nevertheless, one can certainly imagine some cases of emergency cannibalism that involve disrespecting those eaten. This indicates that the circumstances of the cannibalism will be the determining factor in deciding whether or not respect for persons has been violated.

In the case of fetish cannibalism, disrespecting the person cannibalized is much more common. In most cases of this kind of anthropophagy, a person is murdered and then eaten. All cases of murder (though not necessarily all cases of killing) involve disrespecting the person murdered (one doesn't acknowledge the person's desire and right to live). Nevertheless, there is at least one case in which fetishistic cannibalism was contingent on the consent of the cannibalized. In the 2002 case of Armin Meiwes, Meiwes actually released one potential victim of cannibalization when the voluntary victim revoked consent (Wisnewski 2007). He also went to great lengths to document the consent of Bernd-Jurgen Brandes, utilizing videotaping as well as written consent prior to actually killing and eating him. If respect for persons involves requiring their consent to whatever one intends to do to them (an arguable, but nevertheless plausible, account of what respect involves), then fetish cannibalism is at least in principle consistent with respect for persons (even if in practice it is usually not).

Consent and Cannibalism

Some argue that consent to cannibalism mitigates any wrongdoing involved in it. Provided it is possible to consent to cannibalism, then, consent transforms an otherwise immoral act into a permissible one. One response to this argument is to claim that consent cannot be given, as only someone who is irrational would agree to be eaten. This reply, however, is circular. Fetishes are by definition irrational. It does not follow from this that one cannot consent to participate in a fetish. If one insists all cases of fetish cannibalism are illegitimate, one has simple presupposed that it is impossible to consent to cannibalism. Of course, this is the very question which is at issue in moral debates about anthropophagy (is cannibalism ever permissible?). If one begins with the assumption that cannibalism cannot be the object of consent, one cannot then claim that this assumption proves the impermissibility of cannibalism. More argument is needed (Wisnewski 2004, 2007).

Another objection that can be raised against the view that consensual cannibalism is acceptable goes as follows: any moral doctrine which concludes that cannibalism is moral must be mistaken. If an emphasis on consent has this implication, then there must be something wrong with the doctrine that consent can transform an immoral action into a moral one. If consenting can justify cannibalism, the objection runs, then it can justify *anything*. This by itself might be taken to indicate that consent cannot be the only measure of the moral permissibility of an action. Of course, this line of objection also takes for granted the immorality of cannibalism rather than establishing it.

Arguments from Disgust

The most common immediate reaction to cannibalism is to claim that the practice is disgusting. The moral relevance of an appeal to disgust, however, is hotly contested. While some philosophers argue that disgust *can be* morally relevant, few argue that it is always so. This means that any appeal to disgust must also rely on additional

arguments if it is to make the case that disgust *in regard to cannibalism* demonstrates the immorality of that practice. Given that picking one's nose is disgusting, after all, hardly entails that it is immoral. Even if we all accept that eating another human being is disgusting, then, we have not yet shown that it is also immoral, let alone that it is immoral *because* it is disgusting.

Rights-Based Arguments

One argument against cannibalism states simply that cannibalism violates a duty we owe to other persons. This is sometimes captured by an appeal to the rights of other human beings. Specifying which right is violated by cannibalism, however, is a difficult task. If one claims that we have a right not to be eaten, one has simply asserted the conclusion in advance of providing evidence for it. To say that humans have a right to not be eaten is equivalent to saying that cannibalism is wrong (one cannot *conclude* that cannibalism is wrong simply by asserting it in alternative language).

To make a case against cannibalism based on human rights, then, one must appeal to a right that is not equivalent to the right not to be cannibalized and then show that cannibalism violates this right. There are several difficulties that must be overcome to make such a case.

Murder is not cannibalism. One might accept the claim that all persons have a right to life and thus conclude that any killing for the purpose of cannibalism violates this right to life while also maintaining that cannibalism itself does not violate this right. In other words, to kill in order to cannibalize is indeed a violation of the right to life; to cannibalize one who is already dead, however, does not violate this right.

One theoretical difficulty with the appeal to rights goes as follows: some have argued that only *living subjects* can have rights. On this view, the dead possess no rights, as the dead, strictly speaking, *do not exist*. On this view, traceable to Epicurus and Lucretius, death is simply nonexistence. One must exist to have rights. Therefore, the dead cannot be said to have rights.

There are two plausible responses to this line of argument. First, one can argue that the dead do, in fact, have rights (or, put alternatively, that the dead can still make demands on the living). Second, one can argue that the living have rights that *involve* the dead, even if the dead themselves do not have rights.

The claim that the dead have rights is widely enshrined in western law. We protect the wishes of the deceased by carrying out their wills; we utilize laws to govern the exhumation of human remains, presumably because we collectively regard the dead as having a right to "rest in peace." Of course, the fact that such rights are enshrined in law does not entail that they are justified. Nevertheless, such laws provide some evidence for the view that many *regard* the deceased as entitled to certain kinds of respect.

The claim that persons have obligations *regarding* the dead, even if the dead have no rights, is sometimes discussed in terms of indirect duties. Because a person has property rights, for example, I have a duty to that person to refrain from destroying his or her property. In this way, I have an indirect duty *to the property* because I have a direct duty to the person who owns this property. Analogously, one might think I have indirect duties to the dead because I have direct duties to the living. Thus, desecrating or disrespecting corpses, on this view, would amount to violating a duty I have to living human beings – perhaps the family of the deceased, who do not want their deceased loved ones interfered with, or perhaps even to society at large.

The question still remains, however, as to which right in particular is violated by cases of cannibalism. An appeal to the right to be treated with respect fails for reasons discussed above (see Respect and Cannibalism). After all, there are cases in which respect is shown *by cannibalizing a person*. Nevertheless, one might acknowledge that the means through which one shows respect differ across different cultures. On this view, then, showing respect will be an absolute obligation (there is a universal right to it), even though the *means by which* one shows respect will differ across cultures. The conclusion here

must be substantially weaker – namely, that it is wrong to cannibalize only in those cases where cannibalism represents disrespect for the dead. This conclusion, of course, is compatible with the claim that cannibalism is not universally wrong.

One might similarly argue that cannibalism violates a central principle of deontology, the ethics of duty. In one of its most famous formulations, duty requires that we treat human beings "as ends and never merely as means" (Kant 1999). To eat another human being, on this view, involves treating that person as a means (food) to a particular end (nourishment) and hence cannot be defended.

Two substantial problems can be raised against this deontological argument, however. First, one might argue that the right to be treated as an end (and not a mere means) does not extend beyond the grave. That is, one might argue that we only have a duty to respect the *living*. If this is correct, the above argument fails in the case of cannibalism, despite the fact that the duty holds among the living. More persuasively, one can point to ritualistic cannibalism as an example of respecting the dead (at least in those cases where it is used for this purpose). This seems to indicate that respect for persons, alive or dead, is compatible with at least some kinds of cannibalism and hence that cannibalism does not necessarily involve the absence of respectful treatment.

An appeal to universal rights not to be cannibalized has some unexpected consequences. In a strict case of emergency cannibalism, for example, an absolute and universal right against cannibalism entails that starving to death is morally required. Many people find this result counterintuitive. An emergency situation, by its very nature, is exceptional. Moreover, one might argue that certain otherwise immoral actions are permitted when these actions are necessary for life preservation. These concessions entail, however, that the prohibition against cannibalism cannot be absolute. Once we grant that there are some conditions under which cannibalism is acceptable, we grant that the range of permissible cases may be wider than we initially suspected.

Utilitarian Arguments

Utilitarianism is the view that actions are right or wrong in virtue of the consequences they produce, where we measure the consequences of an action in terms of some predefined good (pleasure, happiness, interests, preferences, etc.; see Mill 2002). Utilitarian arguments can also be given against cannibalism. Before considering these arguments, one should distinguish between those arguments that aim to show it would be immoral to legalize cannibalism (a policy question) and those arguments for the view that any individual act of cannibalism is immoral. Utilitarian consideration can arguably establish the first claim; they fall substantially short of the second.

On the policy side of the issue, one might argue that allowing (or encouraging) cannibalism will shape the way individuals within a society understand their fellow human beings. If we come to see one another as a source of food, this argument goes, we will have a fundamentally diminished view of other persons, and the consequences of this will be both far-reaching and dire. Because a healthy society must cultivate and maintain mutual respect among its citizens, accepting cannibalism when it occurs violates utilitarian principles. Ultimately, accepting cannibalism will diminish the well-being of every member of the society that practices it. Further, one might argue that a society in which the dead are not permitted to "rest in peace" would create anxiety *among the living* regarding what may befall their mortal remains. An increase in this anxiety, it might be argued, would thus produce more pain than pleasure (and hence should be rejected on utilitarian grounds).

Of course, the utilitarian must consider both short-term and long-term consequences. Given that there have been cannibalistic societies where the above argument does not seem to hold, one can respond to the above argument by pointing out that there is no necessary connection between anthropophagy and viewing persons as having diminished worth. After a few generations, the shock of cannibalism may no longer cause the kind of adverse reactions we currently

associate with it. Nevertheless, this hardly entails that we have any reason whatsoever to pursue cannibalism at the level of social policy. As a policy question, then, utilitarian considerations seem to indicate that nothing speaks in favor of allowing cannibalistic practices.

The same arguments cannot be made, however, when applied to individual cases. In fact, utilitarian considerations would seem to justify cannibalism in emergency situations. In such a case, the initial revulsion one faces is outweighed by the desire to avoid death and starvation. Moreover, even if we maintain that the dead person cannibalized has a postmortem interest in not being eaten, this interest would seem to be outweighed by the need to save lives. (This argument in favor of emergency cannibalism presumes that the person cannibalized is already dead. The view that we should kill someone in order to eat them, even in emergency situations, is a much more controversial matter.)

Evolution and Cannibalism

A roughly utilitarian argument is sometimes made from the point of view of evolution. If humans eat one another, the argument goes, the species as a whole will not benefit. There is some evidence that human consumption of human flesh increases the likelihood of Creutzfeldt-Jakob syndrome, a disease which attacks the central nervous system and which results from a buildup of prion proteins. Prions are spontaneously generated in humans even absent any cannibalism, though the consumption of human flesh containing prions increases the likelihood that one will acquire the disease.

Virtue Ethics and Cannibalism

A virtue ethics aims to identify and cultivate particular virtues within individual human beings. Virtues are dispositions, or states of character, that are conducive to human excellence and flourishing (Aristotle 1980). To argue against the consumption of human beings from within a tradition of virtue ethics, one would need to show that those traits that lead to anthropophagy are themselves not consistent with, or at least not conducive to, the virtuous life. However, simply asserting that cannibalism is not virtuous is not an argument, as it presupposes the very thing it attempts to establish. To prevent arguing circularly, one must establish some specific trait or virtue that is violated by the practice. For example, one might argue that engaging in cannibalism makes it easier to view a person as a thing and that viewing persons in such a way is not part of the virtuous life. Such arguments, however, face the same obstacles we find in other cases: there have been societies that routinely engaged in ritualistic cannibalism, and some forms of ritualistic cannibalism do not seem to involve treating the cannibalized as a mere thing. Indeed, in at least some ritualistic cannibalism, the body of the cannibalized is regarded with a kind of reverence. While it is certainly possible that these cultures were engaging in practices incompatible with virtue, more argument is required to establish this. To insist that these cultural practices are illegitimate without providing such an argument may well be ethnocentric.

Summary

There are arguments against eating humans from virtually every major ethical tradition as well as from the majority of religious traditions. These arguments, however, rarely (if ever) cover every kind of cannibalism, and all face serious objections. The absence of arguments establishing a universal prohibition of cannibalism is not equivalent to the claim that cannibalism is morally permissible. It may be permissible in certain cases, but such cases will have to be assessed individually.

Cross-References

- ▶ Food Ethics and Policies
- ▶ Meat: Ethical Considerations
- ▶ Systemic Ethics to Support Wellbeing
- ▶ You Are What You Eat

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Carbon Farming

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Carbon farming is a term used to describe agricultural activity that is undertaken with an express desire to improve the levels of carbon in the atmosphere. Some approaches to carbon farming focus on reducing the output of carbon from agricultural activities. The term is also used to refer to agricultural activities conducted with the express intention of capturing carbon dioxide from the atmosphere in order to mitigate against climate change. Carbon is captured in the cells of living plants. At this stage, it can either be turned into another manufactured product, such as biofuel or biomass. This can be used by other processes or, in the case of charcoal, can be "sequestered" and plowed into the ground locking up the captured carbon. A range of land management, agricultural, and agroforestry techniques can be deployed with the intention of managing carbon.

The Carbon Cycle in Agriculture

Within the carbon cycle, there are a great many transactions taking place that exchange carbon between natural pools. As plants grow, they take carbon dioxide from the atmosphere and fix the carbon creating organic (carbon containing) cell matter. Thus, carbon is extracted from the atmosphere to the biosphere. Some of this carbon may find its way back into the atmosphere. If fuel from plants, wood, biofuel, or biomass is burned, the captured carbon in the cells of the plants will be released into the atmosphere as carbon dioxide. When animals or humans eat carbon containing plant matter and digest the food, it provides energy – the humans and animals producing carbon dioxide through the process of respiration. Furthermore, excreted products may return to the pedosphere – the soil. There are other ways that plant matter can return to the pedosphere. Biomass that is not utilized as a product may die back and return to the soil. One approach to carbon farming is that a crop is grown specifically with the intention of returning the carbon it absorbs through growth, into the pedosphere – sinking carbon from the atmosphere.

It is also important to consider that modern industrialized agriculture be also reliant on external inputs; some of which are carbon intensive. Agricultural equipment is often fossil fuel-powered transportation and logistics of agricultural goods also generate carbon. In the United States, agriculture is responsible for 7 % of total US greenhouse gas emissions. Furthermore, the variety of chemicals and pesticides used in some agricultural practices all require energy and hence carbon to manufacture. When assessing the carbon impact of agricultural activities, these external inputs need to be factored into the carbon accounting.

It is helpful to consider the relative proportions of carbon in the biosphere (575 Gt), the atmosphere (780 Gt), and the pedosphere (2,700 Gt). Agricultural practices can modify the content of carbon in the pedosphere – either liberating it or sequestering additional carbon. As such, agriculture has an important role to play in managing global carbon levels.

Other Greenhouse Gases

In addition to carbon, agricultural processes also result in the release of significant quantities of other greenhouse gases which contribute to climate change. When accounting for the activity of different greenhouse gases, a measure is used known as "carbon equivalence." This accounts for the fact that some gases have a much greater global warming potential than carbon dioxide. This is a measure of the effect these gases have on "radiative forcing" over a given time period, usually considered as 100 years. Of significance is nitrogen oxide and methane. Methane is 25 times more active as a greenhouse gas than nitrous oxide. Nitrous oxide is 298 times more active than carbon dioxide. Nitrous oxide is created as the result of soil and manure management processes. Methane also results from manure management processes and fermentation processes. As these gases also contribute to climate change effects, they can be considered as an extension of carbon management.

Climate Change and Carbon

In order to avoid climate change, there is a need to decarbonize our society and reduce the levels of global greenhouse gas emissions, particularly carbon dioxide, substantially. In the Intergovernmental Panel on Climate Change's (IPCC) Fifth Report, it is believed with a 95 % level of certainty that human sources of carbon emission were the "dominant" force responsible for climate change since the 1950s. The report, which represents a synthesis of the most up-to-date data on climate change, presents a list of evidence that the air, oceans, and land are all unequivocally in the process of undergoing a change, with further rises in greenhouse gas levels contributing to increased warming and changes in all aspects of the climate system.

What is so concerning about climate change is that the present changes are unprecedented on time scales from "decades to millennia." The tangible effects are warming of the land, sea, and air, the loss of ice from ice caps and glaciers, and an increasing in global average mean sea levels. Low-lying land is threatened by increases of sea level, which by 2081–2100, are projected to be in the range of 26–82 cm.

In order to reduce carbon emissions, we need to decrease the amount of nonrenewable fossil fuels that are burned. They release large quantities of carbon dioxide, which has been stored underground for millions of years.

This will involve significant technological and societal change. Fossil fuels, because of their energy density and versatility, are ubiquitous. So much of our society is dependent and reliant on the stable configuration of fossil fuels, the infrastructures used to process and distribute them, the technologies used to utilize them, and the institutions and companies which support their production, distribution, and use. Achieving a transition away from this configuration, to a low carbon economy, is no small feat.

There are many voices, however, who counter that we are unable to reduce the rate at which we emit carbon dioxide quickly enough to avoid some of the worst effects of climate change. Those who believe we are unable to make this transition quickly enough assert that other means will be required to reduce atmospheric levels of carbon, in order to avoid some of the worst effects of climate change.

It is argued that in order to reduce atmospheric concentrations of carbon dioxide further, we should invest in measures to "capture" carbon dioxide from the atmosphere or industrial processes and sequester it underground. Some approaches to this problem entail significant technological and engineering input and deep geological storage. Carbon farming methods, by contrast, have the potential to be cheaper, storing carbon in the upper layers of soil.

Climate Engineering

Climate engineering is the process of deliberately intervening in the Earth's climate system on a large scale through the application of geoengineering techniques with the express intention of reducing the effects of climate change. There are two distinct approaches to climate engineering. One set of approaches focuses on reducing the levels of carbon dioxide in the atmosphere, while other methods focus on managing the levels of solar radiation reaching the Earth, to mitigate against higher levels of carbon dioxide in the atmosphere. Carbon farming methods fit in to the former series of approaches.

This is not seen as an alternative to emissions reduction but as a complimentary approach. Mitigation is seen as the primary key to addressing climate change (reducing carbon emissions), and there is also increasing acceptance that there may need to be a degree of adaptation to climate change. Geoengineering approaches like carbon farming are seen as a third and final approach.

Carbon Farming Methods

There are a number of methods which can be deployed in order to increase the soil carbon pool. These include restoration of the soil, regeneration of woodlands, no-till farming, crops which provide cover for the soil, management of soil nutrients, and the application of manures and sludges to ground. All of these approaches aim to conserve the quantity of carbon locked up in the pedosphere.

There are a number of specific approaches to carbon farming, which have received significant attention:

No-Till Farming

In traditional farming methods, the soil is tilled between crops. This is to say that the soil is mechanically agitated – either by humans, draft animal power, or mechanical means. Soil microbial activity increases rapidly as a result of the exposure to air, and the inversion of different soil layers. This microbial activity leads to the decomposition of organic matter and the release of carbon dioxide into the atmosphere. It has been estimated that 78 billion metric tonnes of carbon emissions has resulted from the practice of tillage. That industrial agricultural practices have depleted the uppermost layers of cropland soils presents an opportunity – as the depleted nature of these soils makes them receptive to use as a carbon sink. In addition to preventing emissions of carbon, no-till farming also reduces emissions of nitrogen oxide, another greenhouse gas.

In place of the mechanical agitation of soil, no-till farming uses organic residues that result from previous crop cycles left on the surface of the soil, and methods of sowing and fertilization that can be carried out without disturbance to the soil.

This biomass becomes incorporated with the soil, improving its carbon content. There are other corollary benefits to no-till farming. It helps to combat soil erosion and also ensures that water and nutrients are retained in the soil.

Biochar

Biochar refers to the use of charcoal as an agent for soil improvement. The charcoal is produced from the pyrolysis of biomass, which has been grown specifically for the purpose. Burying this charcoal in the soil helps to sequester carbon emissions, with the objective that the process has a negative carbon balance. There are corollary agricultural benefits to this approach – the improved soil has the potential to be more fertile, productive, and resistant to disease. Early European settlers to the Amazon basin noted the incorporation of charcoal into the soils that they found and called this soil *terra preta de Indio*. This soil had charcoal, bone, and manure added to improve its fertility. Fragments of pottery and other human artifacts have led archaeologists to the conclusion that this soil was the result of human activity. It is unproven whether *terra preta* was deliberately created; however, it has been found to be more fertile than unimproved soil.

Desert-Based Carbon Farming

In order to address the concerns of those who feel that carbon farming methods could compete with or potentially compromise agricultural activities for food production, there is a significant body of

knowledge to suggest that carbon farming efforts should be directed to land which cannot be used for other agricultural purposes.

It is estimated that a hectare of the plant *Jatropha* could capture 25 tonnes of carbon dioxide per annum when grown in desert or marginal conditions. There would also be other derivative benefits to growing Jatropha in the desert. Potentially, desert areas could become more habitable. Furthermore, the plants seeds can be harvested for biofuel production.

However, one of the barriers to this plan is the availability of desalination plants. Water, additionally, is a precious commodity, and production of clean water from sea water is an energy intensive activity in itself. Some have advocated an industrial ecology approach to this problem – using biomass grown as a result of desert afforestation projects, to provide the power for desalination in a self-sustaining circular process.

Reforestation/Afforestation

Reforestation is the process of restoring forests that have been destroyed, while afforestation is the process of establishing a new forest in a place where there has not been one before. As the trees grow, they absorb carbon dioxide from the atmosphere. However, this is a reversible process, as if they are later burnt, that carbon is released again.

Manure Management

Animal wastes result in the emissions of greenhouse gases. They also result in nuisance odors. Both of these problems can be brought under control by better management of animal wastes. Anaerobic digesters can be used to capture the gases produced by manure as it is digested. This gas, rather than entering the atmosphere, can be used to generate energy, which can be fed into the grid. The carbon dioxide that results from burning the gas has a diminished global warming potential compared to the methane and nitrous oxide captured from the digestate.

Economics of Carbon Farming

Climate change will result in real and tangible changes to the environments in which people will live. There are financial costs attached to the process of mitigating against and adapting to climate change. There are various markets, internationally, on which carbon can be traded. In those legislatures where carbon emissions reductions are mandated, carbon trading activity is often used as an alternative for those who find it impossible or uneconomical to meet their commitments. A ceiling is established for carbon emissions, which producers cannot exceed. Those who fail to reduce their carbon emissions are able to purchase "carbon credits" from projects that seek to capture carbon. Equally, projects in the developing world that seek to reduce carbon levels may be financed through carbon credits.

There is the potential for those engaged in carbon farming activity to realize revenues through the sale of "carbon rights" to the carbon sequestered in their project.

There is much criticism and debate as to whether carbon trading constitutes a fair, equitable, and efficient way of reducing carbon emissions. In particular, there are wide and varied concerns about deficiencies in the design of carbon trading, their propensity to be manipulated and gamed, and the potential lack of equity. Others advocate a "gate tax" on carbon emitting fuels as a more efficient way of meeting the aim of reducing carbon emissions. That said, emissions trading schemes do have the potential to create revenue streams for carbon farming projects.

Agricultural Access to Carbon Markets

There is an economic value to carbon mitigation. Markets have been established on which carbon can be traded between those who can offer the means to reduce carbon emissions or remove carbon from the atmosphere – and those companies and industries with a need to reduce carbon emissions, but who cannot meet their obligations. The discourse on carbon markets is vast; there are many challenges in designing effective systems for carbon to be accounted for and traded.

One of the relevant issues to those engaged in activities of carbon farming is how to access the markets for carbon. Here, initiatives like the Carbon Farming Initiative act as the bridge

between those who are able to sequester carbon through agricultural initiatives.

Another issue is that carbon markets value only carbon; they do not place a value on other environmental services. As we have already noted, there are concerns about methods of carbon farming for which economic maximization is the main goal with environmental conservation being treated as a secondary priority.

Concerns About Carbon Farming

While carbon farming is a potential solution to reducing atmospheric concentrations of carbon dioxide, there are also a number of concerns that wide-scale adoption of this practice could have other, unintended consequences. Another parallel debate, which we could consider at the same time, is the rush to production of biofuels as a carbon-reduction measure. Many of the consequences of both measures are similar.

If landowners simply seek to maximize profits from carbon farming, there is a concern that large monocultures will be created that will undermine ecosystem biodiversity. Carbon farming schemes that simply incentivize carbon sequestration without adequate land stewardship guarantees are likely to result in carbon farmers seeking simply to maximize profit, inevitably resulting in unsustainable agricultural practices.

Furthermore, there is concern that carbon farming could compete with food crops for land, leading to an increase in the prices of food, which could adversely affect many of those in poverty or close to the poverty line.

Some have advocated that carbon farming could be carried out on marginal land. However, while this land might not be wholly suitable for commercial agriculture, there are still a great many of the world's poor who are dependent on marginal land for their subsistence – using it to graze animals and carry out small-scale agriculture.

That said, there are also measures that can address these concerns while also yielding environmental benefits. Agroforestry is an approach, which combines agriculture and forestry, and has potential to be used in the context of carbon farming. Here, the integration of trees with more traditional cropping systems can yield resilience to problems associated with soil erosion.

Other approaches suggest that carbon farming should be done in areas of land that are wholly unsuitable for agricultural purposes, eliminating concerns that this would then compete with food and other crops for land. It has been suggested that Jatropha could be grown as a carbon crop in dry coastal areas.

Benefits from Best Practice Carbon Farming

If there is an adequate framework of incentives and regulation, it is possible for best practice carbon farming to yield a plethora of positive outcomes: above and beyond the fixation of carbon.

Carbon farming practices have the potential to result in the restoration of ecosystem services. Best practice schemes may also promote carbon farming in concert with a number of other goals. Soil erosion can be prevented through the binding effect of plant root structures. The accumulation or organic matter or charcoal forming terra preta can also act as a soil restorative. Pollination and the bee population can be encouraged with the selection of suitable plants.

Carbon Farming Initiatives

There are a number of initiatives globally that seek to promote the practice of carbon farming.

One of the most notable carbon farming initiatives is the CFI, a scheme which allows for Australian Carbon Credit Units (ACCUs) to be earned from agricultural and forestry carbon farming projects. This scheme is administered in Australia by the "Clean Energy Regulator." It provides for farming businesses to earn ACCUs through both schemes to reduce carbon emissions through sequestering carbon in soil – but equally, through avoidance of other greenhouse gases such as methane and nitrous oxide.

The scheme allows farmers to earn carbon credits if they follow a series of "approved methodologies." These methodologies are in place to

provide a robust assurance that the stated carbon aims will be achieved through the agricultural practice. There is an additional guarantee that these methodologies are robust, as a result of external scrutiny from another department, the DOIC – the Domestic Offsets Integrity Committee.

Summary

With the latest climate science emerging from the IPCC's Fifth Report, the anthropogenic origins of climate change are undisputed. The measures required to reduce carbon emissions worldwide in an equitable manner are tough. Carbon-reduction measures of the magnitude required will require substantial changes in lifestyles, the way we configure our societies, and the technologies we use to deliver the goods and services that we use.

It is for this reason that measures such as carbon farming, which can help mitigate against carbon emissions but have relatively small impact on many peoples everyday lives, are seen as seductive in their simplicity.

Undeniably, the twin pressures of resource scarcity and climate change will shape agricultural processes and practices in the years to come. Carbon farming potentially has consequential benefits when integrated with other agricultural practices – not only for the atmosphere but also for soil quality and the biosphere.

That said, there are also substantial risks involved. Providing subsidy and incentive mechanisms for carbon farming, without appropriate consideration of regulation, has the potential to lead to unforeseen impacts. We can see many parallels in the biofuels debate, where misguided subsidies have caused multifarious environmental and social problems. Incentives based on targets, without effective oversight, have the potential to lead to environmental destruction. Furthermore, there are also risks with the loss of productive agricultural land which could otherwise be used for food production. Carbon farming has the potential to encounter the same problems that biofuels have created in reference to food versus fuel.

That said, as the consensus regarding climate change becomes increasingly solid and immutable, the need for practical solutions will become increasingly urgent. Carbon farming has a role to play in carbon reduction if well implemented.

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Carnism

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Synonyms

A kind of speciesism; Ideology of meat; Melanie Joy's view on food ethics; The opposite of veganism

Introduction

Carnism refers to the ideology conditioning people to consume certain animal products. It is essentially the opposite of veganism. The term was coined by social psychologist Melanie Joy (2001). She has fully developed the concept in further papers and in her book Why We Love Dogs, Eat Pigs, and Wear Cows: An Introduction to Carnism (Joy 2010). As the title of Joy's book suggest, people's relation to animals depends crucially on the species to which they belong: "We love dogs and eat cows not because dogs and cows are fundamentally different – cows, like dogs, have feelings, preferences, and consciousness – but because our perception of them is different. And, consequently, our perception of their meat is different as well" (Joy 2010, p. 12).

A Descriptive Concept with a Normative Import

The primary goal of the concept of carnism is to describe a psychological fact: the perception of animal products as food is highly cultural. Indeed, different cultures categorize species differently: contrary to occidental habits, some Koreans regularly eat dogs, while in India, cattle who till soil and produce milk are perceived as inedible. In this basic sense, carnism is the generic name, which gathers all of the different ways people attribute edibility. Of course there is a gap between real edibility and perceived edibility: human beings are omnivores – they can eat the flesh of almost all animals (including human flesh). But they do not. In fact, the eaten species appear to be very few when compared with all the species living on Earth. Westerners, for instance, eat – on a regular basis – only a dozen species (mainly herbivores) among the millions of species of mammals, birds, fish, reptiles, and amphibians on the planet.

While recalling the gap between perceived and real edibility, the concept of carnism also suggests that there is nothing inevitable about Koreans eating dogs, Indians not eating cows, or Westerners eating pigs but not dogs. Here begins the normative use of carnism. Indeed, being largely unaware of the inherent cultural influence on perceived edibility prevents people from changing their food habits. This is why Joy considers that carnism is an exemplification of an ideology, i.e., a "shared set of beliefs, as well as the practices that reflect these beliefs" (Joy 2010, p. 29).

In this sense, veganism is also an ideology. Ethical vegans, for instance, believe that it is unethical to consume animal products (usually for animal welfare/rights or environmental concerns) and follow the particular practice associated with these beliefs: in a restaurant they will chose the veggie burger instead of the beef burger. So, they chose not to eat meat. Joy formulated the idea of the concept of carnism when she noticed that there was no word to name the opposite ideology: people who choose to consume animal products and believe that it is the right thing to do. The best candidate, "omnivore," was not an option because it denotes a biological disposition but not a set of beliefs. Moreover, vegans are not different from omnivores in the biological sense, so Joy thought a neologism was needed. She coined "carnism" from the Latin radical "carn" meaning "flesh" or "of the flesh" (carnism includes the consumption of eggs/dairy).

If veganism and carnism are both ideologies, they are, however, opposed in important ways. People who endorse veganism do so knowingly; people who endorse carnism are usually unaware

of doing so. Indeed, an ideology is not always visible – the ideology of patriarchy is a prominent example. For thousands of years, men and women believed that masculinity was somehow "better" than femininity. It followed from this than men had more social power than women. It was an invisible ideology and one that still exists. A great achievement of the feminist movement is having brought attention to the existence of patriarchy and making its effects visible. Prior to the efforts of the feminist movement, patriarchy's existence in society was the status quo, rarely questioned and almost never challenged. The same can be said for carnism: this ideology is so entrenched, it is so pervasively widespread in human societies, that it is largely ignored.

Social norms favor and reinforce the consumption of animal products and this is the mainstream way of life. By contrast, vegetarians and vegans are sometimes stereotyped as hippies or people with eating disorders, and they often trigger defensive reactions: "they are called hypocrites if they wear leather, purists or extremists if they don't" (Joy 2010, p. 105). Consuming animal products is also valued because it is supposedly "natural" (which is a naturalistic fallacy because the fact that humans are omnivores is not a justification to any normative claim) and necessary for good health (despite overwhelming evidence to the contrary). As in the case of patriarchy, all of these justifications concur to present carnism as normal, natural, and necessary. It appears to be an inevitable system and not a challengeable ideology.

For Joy, there is another important opposition between carnism and veganism. It is a normative one. Carnism – like patriarchy – is a violent and oppressive ideology; veganism is not. Indeed, this has been the basis of the animal rights movement for the last 40 years. Even if there are differing views in animal ethics, the fact that animal agriculture and slaughtering are violent practices is usually not controversy. "Contemporary carnism is organized around extensive violence. This level of violence is necessary in order to slaughter enough animals for the meat industry to maintain its current profit margin. The violence of carnism is such that most people are unwilling to witness it, and those who do can become seriously distraught" (Joy 2010, p. 32).

Hence, it could be said that carnism is a descriptive concept with a normative import. By naming a psychological fact – the perception of meat and animal products depends on a pervasive ideology – the concept of carnism makes people aware of it and allows them to challenge their perceptions and therefore move away from the violence in their lives that had before seemed inevitable. To say otherwise, showing that edibility depends on culture sheds light on an additional point: perception of edibility is morally arbitrary. Pigs deserve no more than dogs to be eaten. (For a similar view stressing the analogy between puppies and pigs, see Norcross 2004.)

Thus, the concept of carnism allows to change perspective. Beside the question "Why are some people vegan?" appears this new one, "Why some people are not?"

How Carnism Works: Explaining the Moral Inconsistency

The title of Melanie Joy's book exposes a kind of inconsistency: people care for dogs and empathize with them while ignoring the suffering of pigs and cows. Putting aside some psychiatric disorders like psychopathy, empathy is a widespread human faculty, and there is neurological evidence that people feel empathy toward animals (Filippi et al. 2011). So, the question is not why people empathize with dogs, but, rather, why they don't express empathy toward pigs and cows. In a certain sense, understanding how carnism "works" consists of understanding this lack of empathy toward certain animals.

Omission is probably the central explanation: "The ten billion animals that are killed every year for meat and the virulent consequences of contemporary animal agricultural practices remain conspicuously absent from public discourse" (Joy 2010, p. 102). But this omission does not mean that people are completely ignorant of the reality of factory farming and violence toward animals. "Common to all violent ideologies is this

phenomenon of knowing without knowing. And it's the essence of carnism" (Joy 2010, p. 70).

According to Joy, there are several psychological mechanisms, which she identifies as psychic numbing (Slovic 2007) or "primary defenses" of carnism (the secondary defenses are justifications, like those described in part 4). They come in several ways. Objectification consists of viewing animals as things: for instance, in calling a chicken a broiler or steers beef. Deindividualization consists of viewing animals as abstraction. Finally, dichotomization allows people to put animals in categories like pets and farmed animal or cute and ugly.

However, all those interested in moral inconsistencies do not arrive at the same conclusions as Joy. Studying the animal–human interactions (or "anthrozoology"), the psychologist Hal Herzog considers that contrasting attitudes toward animals reflect merely different moral intuitions that may be triggered by different moral heuristics (Herzog and Burghardt 2005). They are not anomalies or hypocrisies, nor are they caused by an invisible ideology or a lack of empathy. Rather, they are part of human nature and somewhat inevitable. They are an "unavoidable result of the perennial tug of war between the rational part of us and the yahoo within" (Herzog 2010, p. 239). Herzog even acknowledges these inconsistencies in his own behaviors: "The yahoo [My intuition] tells me that the exquisite taste of slow-cooked pit barbecue somehow justifies the death of the hog whose loin I am going to slather with a pepper-based dry rub" (Herzog 2010, pp. 255–256).

Working from Herzog's theory that empathy is not the default attitude toward animals, the question of why people love pets must then be addressed. A possible explanation comes from the "cute response" which could trigger parental instincts (Sherpell 2002). Indeed, pets often share features with human infants: large foreheads and craniums, big eyes, bulging chicks, and soft contours. Animals that are eaten, on the other hand, often lack this cute factor. Another interesting explanation of inconsistent empathy responses could derive from disgust (Ruby and Heine 2012) or food taboo (Fessler and Navarrete 2003).

However, recent experimental studies tend to confirm Joy's view. For instance, it has been shown that categorizing an animal as "food" may diminish their perceived capacity to suffer, which in turn dampens moral concern (Bratanova et al. 2011). When people are asked to eat dried beef instead of dried nuts, they show less moral concern for cows and animals in general (Loughnan et al. 2010). This can be analyzed in terms of cognitive dissonance. Indeed, people do care for animal but they also enjoy their meat. One way to reduce this dissonance is to deny that animals suffer and are sentient. Thus, in an insightful study, Brock Bastian and his colleagues showed that people attribute less mental capacity to a cow (or a sheep) when the animal was described as being bred for meat consumption as opposed to having been bred for a different purpose (Bastian et al. 2012).

Finally, a link between racism, on the one hand, and speciesism or carnism, on the other, has been experimentally established. For instance, children's human–animal divide beliefs predicted greater racial prejudice, an effect explained by heightened racial dehumanization (Costello and Hodson 2012). The study of people's relationship with animals, especially the ones chosen to like and to eat, is still fairly new. But it appears to be a fascinating and blossoming field, which will surely also be improved by the new understanding of the psychology of vegans and vegetarians (Ruby 2012).

Origin and Debates

The name "carnism" is a neologism, but the ideas behind the word are not brand new. As early as the first century BC, the Greek essayist Plutarch tried to shift the perspective on vegetarism in his "De esu carnium" (On Eating Meat): "Can you really ask what reason Pythagoras had for abstaining from flesh? For my part I rather wonder both by what accident and in what state of soul or mind the first man who did so, touched his mouth to gore and brought his lips to the flesh of a dead creature, he who set forth tables of dead, stale bodies and ventured to call food and

nourishment the parts that had a little before bellowed and cried, moved and lived" (Plutarch 1957, p. 541).

So, for Plutarch, what is really surprising is not why some people do not eat flesh but why so many do. He also sheds light on many inconsistencies and false beliefs surrounding animals used for food; for him, eating flesh is no longer a necessity and is not natural for human beings. Indeed, in a remote past, our ancestors may have had no choice but to eat flesh, but the progress of agriculture now makes it superfluous. People also think that they are naturally designed to eat meat. But this is false, replies Plutarch in this oft-cited excerpt: "If you declare that you are naturally designed for such a diet, then first kill for yourself what you want to eat. Do it, however, only through your own resources, unaided by cleaver or cudgel or any kind of axe" (Plutarch 1957, p. 553). Of course, Plutarch could not use the modern concept of ideology. But his identification of false beliefs and his attempt to understand their origin and the ways in which people endorse them surely makes him one of the main precursors of the concept of carnism.

More recently, many authors in the field of animal ethics have raised similar concerns. Already in the 1975 preface of his work Animal Liberation, Peter Singer noticed the importance of mental habits, which slow down the moral progress for animals. "Habit. This is the final barrier that the Animal Liberation movement faces. Habits not only of diets but also of thoughts and language must be challenged and altered" (Singer 2009, p. 13).

Singer is well known for having brought the term "speciesism," a concept close to carnism and coined by the psychologist Richard D. Ryder, to the fore. Speciesism – analogous with racism or sexism – means an assignment of moral considerability to individuals solely on the basis of their species. For Singer, this is the basis of a discrimination which is morally arbitrary – just like discriminations based on race or sex are morally arbitrary. (Singer, following the preference utilitarianism, considers that interests of individuals should be the only basis for moral discrimination.)

How then are speciesism and carnism to be distinguished? First, speciesism is broader than carnism. For instance, you can be vegan and consider that no animals deserve to be exploited for food or leather but still morally value the life of a horse more than that of a cow because of their belonging to a hierarchically lower-ranked species. In this case, you are probably not a carnist but, in a sense, you are still a speciesist.

Theoretically, it is possible to be speciesist in according more value to a given species than to the human one, but, most of the time, it means to place humans at the top of the hierarchy and use this first place to justify using other animals for food and to continue exploiting them. So a carnist is a speciesist who focuses his/her attention on certain species (like pigs or cows), assigns them less value than to other species (like humans or dogs), and acts accordingly (eats pigs and wears cows). Carnism is a kind of applied speciesism – and much more easy to identify. Joy puts the distinction this way: "Carnism is the ideology in which it's considered appropriate to eat some of the animals on the lower rungs of the speciesist hierarchy. Carnism is a "sub-ideology" of speciesism, just as anti-Semitism, for instance, is a sub-ideology of racism" ("Carnism Frequently Asked Questions").

But it seems that there is also a more subtle or connotative difference between the two concepts. Carnism describes an ideology: it is something entrenched and embodied which affects the way people perceive animals and food in practice. Speciesism refers to a normative theory: it is a justification of certain value assignments. So, carnism can be interpreted more as a psychological concept and speciesism as a philosophical one. It also seems possible to consider the two concepts as the two sides of the same coin: the descriptive and the normative. In the latter sense, one could perceive and behave as a carnist but think and conceptualize as a speciesist.

Some have criticized the concept of carnism because it could be confusing, etymologically and ethically. Indeed, even if Joy defines carnism explicitly as the opposite ideology to veganism, the Latin radical "carn" draws attention to flesh.

But people who do not eat flesh are vegetarian, not vegan. However, for Joy, people who believe that consuming animal products (like milk or leather) but not meat is okay are – at least to a certain degree – carnists. It is also true that to illustrate carnism, Joy examines food questions (including milk and eggs) or animal product consumption (like leather), but no other forms of animal exploitation such as animal experiments or animals used in entertainment. Ethical vegans, therefore, can reject the concept of carnism on the basis that it is misleading because it is not the exact negative of their view – for which they still have no name.

This kind of critique comes mainly from the abolitionist approach in animal ethics. Indeed, this approach claims that all animal exploitation should be abolished (focusing especially on the current acceptance of animals being considered property) and recognizes some basic rights for animals. It is classically opposed to the welfarist approach, the focus of which is on animal welfare rather than rights. Now, some abolitionists tend to consider carnism as a welfarist tool or concept. For instance, the leading abolitionist advocate Gary Francione denounces what he calls the "invisibility" position, that is to say, the "claim that the ideology that supports animal exploitation is 'invisible'" (Francione 2012). He reproaches this position to "relieve us from moral responsibility for our conduct, claiming that if we participate in animal exploitation, it's because we are being 'victimized' by the 'invisible' ideology" (Francione 2012).

It should also be noticed that Francione talks about "moral schizophrenia" to qualify the fact that people can condemn dog fighting while eating meat or that hunters can rescue a deer but kill the same one a month later when the hunting season is opened. Thus, moral schizophrenia points out that "we do not think clearly about our moral obligations to animals" (Francione 2007). Francione appears to criticize less the descriptive dimension of carnism than its normative import. It is not clear, however, why reasoning in ideological terms rather than in terms of moral schizophrenia should lead to welfarist rather than abolitionist positions.

Neocarnism: A New Wave of Justifications

Neocarnism refers to a new wave of pro-meat and anti-vegan arguments (Joy 2011). Thanks to the ease of accessing information on the Internet and the growing public awareness of the way consumed animals are treated, it is less easy to deny the harm that is caused to them. The first defense of the carnistic ideology, invisibility, therefore leaves room to justifications as secondary defenses. The neocarnistic arguments allow conscientious consumers, who begin to question their carnistic habits, to refrain from abandoning altogether their omnivore practice and to find reasons to feel good about maintaining it.

Joy identifies, among others, three neocarnistic discourses aimed at responding to animal welfare/rights and environmental and human health arguments. The first discourse holds that veganism is too extreme and that people would be better off consuming "humane" or "happy" meat. In this sense, this discourse tries to conciliate compassion toward animals with carnistic practices. A second line of defense, "ecocarnism," addresses environmental concerns by praising small-scale farms producing local and "sustainable" meat. Joy notices that it is also argued "that people's aversion to killing animals is a modern aberration; veganism is seen as a contemporary movement of upper-middleclass urbanites and suburbanites who have become 'soft' and disconnected from nature" (Joy 2011). The third discourse stresses (against a wealth of strong evidence) that consuming animal products is a necessity for health reasons and that this overrides any moral reasons not to consume animal products. In the end, these discourses remain carnistic, because they do not truly challenge the cultural perception of animal products as food – they simply provide new justifications.

This is why Joy also describes neocarnism as a backlash against veganism; neocarnistic arguments "are signs of society's willingness to examine the ethics of eating meat, eggs, and dairy, and they reflect people's genuine concern for animals (and the environment and health).

But they also reflect the resistance of the dominant, meat-eating culture to truly embracing a vegan ethic" (Joy 2011).

Summary: Carnism and Moral Perception

To conclude, it should be recalled that carnism does not refer to a clear-cut and monolithic ideology. American carnism is not the same as the French or Chinese manifestations of this ideology. Moreover, if carnism and veganism are opposite ideologies, they also stand on a continuum with neocarnism and vegetarianism between the two ends. Therefore, it is possible to be more or less carnist. Or, in a slightly different way, it can also be said that there are some prototypical and atypical instances of carnistic practices and beliefs. In this regard, the fact that the etymology (pointing to flesh) does not extensively define the concept reflects merely this kind of radial structure.

Carnism has been presented as a descriptive concept with a normative import. Naming and describing an ideology allows people to contest it. Thus, from a metaethical perspective, the concept of carnism could be interpreted as a tool for moral knowledge. So, how does this work? If moral knowledge is defined as the set of morally relevant beliefs about a situation, mastering the concept of carnism may surely improve moral knowledge because it makes people aware of many false beliefs (for instance, that eating meat would be natural, normal, and necessary). This is why a descriptive concept, like carnism, can possess a normative import: by improving moral knowledge.

More precisely, and from a moral psychological perspective, it may be said that a large part of this improvement operates through moral perception. This step of cognitive moral process, often overshadowed by the next step of moral judgment, is still crucial, as explains Lawrence Blum:

> An agent may reason well in moral situations, uphold the strictest standards of impartiality for testing her maxims and moral principles, and be adept at deliberation. Yet unless she perceives moral situations as moral situations, and unless she perceives their moral character accurately, her moral principles and skill at deliberation will be for nought and may even lead her astray. In fact one of the most important moral differences between people is between those who miss and those who see various moral features of situations confronting them (Blum 1991, p. 701).

Now, carnism as ideology may succinctly explain this kind of difference in moral perception of animals. For instance, seeing a cow as something rather than as someone could carry important moral significance. Further to this, considering carnism leads people to question their moral perception and to pay attention to moral psychology. This is certainly an interesting aspects of this concept, which is less a philosophical one (like speciesism) than a moral psychological one.

Finally, and from a normative theory perspective, the concept of carnism could be related to virtue ethics. Of course, deontologists and consequentialists may be interested by questions of moral knowledge, but by focusing their attention on the agent (rather than on the action or on the consequences of the action), virtue ethicists seem more concerned with understanding, promoting, and discouraging certain kinds of moral perceptions. To that extent, Joy's work may be interpreted as an insightful and useful contribution to a neglected area of animal ethics.

Cross-References

- ▶ Cannibalism
- ▶ Meat: Ethical Considerations
- ▶ Peter Singer and Food
- ▶ Plant-Based Diets and Scientific Value Judgments
- ▶ Vegetarianism

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Centre for Animal Welfare and Ethics

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History of the Institute/Organization

In the 1980s, Australia was experiencing criticism over a number of high profile animal welfare issues, most notably concerning the export of livestock to the Middle East. The cattlemen of Queensland suggested that the University of Queensland might host a Chair in Animal Welfare. In 1989 a UQ Senate Select Committee on Animal Welfare made a recommendation that a Chair in Animal Welfare be established at the University of Queensland. After fund-raising and preparation by the University's Development Office and the School of Veterinary Science, Clive Phillips was appointed to this position in 2003, from the University of Cambridge in the United Kingdom. The funds raised from federal and Queensland state governments, the Australian Veterinary Association, and some local shire councils in the Gatton area were sufficient to support not only the Foundation Chair for a period of five years but also the establishment of a Centre for Animal Welfare and Ethics in 2005. Although the Chair principally addresses animal welfare issues, the steering committee recommended, on the advice of Dr Hugh Wirth (WSPA and RSPCA Australia President), to include animal ethics in the remit of the center.

The Mission of the Centre for Animal Welfare and Ethics (CAWE) is therefore to improve animal welfare, and ethical issues concerned with animal welfare, through research, education, and collaboration that recognizes the cultural diversity of human-animal interaction. CAWE develops innovative practices, guidelines, and management strategies to protect animals, enhance their health, and ensure their welfare.

Major Areas

The primary objective of the center is to study the welfare of animals and ethical issues concerned with their management in Queensland, Australia, and overseas through scientific evaluation of animal management practices. Other objectives are, first, to demonstrate leadership on animal welfare and ethical issues and ensure that staff, undergraduate, and postgraduate students at the University of Queensland are aware of new developments in the field; second, to improve the level of understanding of animal welfare by the general public and in the university community by contributing to courses in animal welfare and ethics; and, third, to encourage animal welfare issues to be included in the broader context of animal husbandry, environmental, and human behavior research.

The center is supported by an Advisory Committee, currently chaired by Dr Mandy Patterson of RSPCA Queensland. The committee provides a review of activities to ensure animal welfare priorities established by the range of stakeholders are considered appropriately. The feedback and direction provided by committee members ensures that CAWE facilitates outcomes in line with its mission and values. The committee also promotes effective communication between the center and key stakeholders, facilitates networking with relevant stakeholders, and provides advice to the center.

Backed by rigorous research, CAWE has built a reputation for striving for improvements in animal welfare in Australia and overseas.

Major Activities

The center is active in animal welfare issues in a variety of animal industries. Government representatives, livestock producers, and other members of primary industries, scientists, veterinarians, and other individuals working in the animal industries are collaborating with CAWE scientists. Recognizing that funders can bias animal welfare research (Van der Schott and Phillips 2013), CAWE has gained a reputation for the independence of its research, providing results which are unaffected by external organizations, media, or public opinion.

The Chair and others within the center have built effective networks with key stakeholders, including local, state, and federal governments, leaders in the primary and intensive farming industries, professional associations such as the Australian Veterinary Association and its state branches, existing animal welfare institutions, and organizations researching improvements to the welfare of animals.

The CAWE has a number of values on which it bases its research activities. First, the principal research activities of the center have animal welfare and/or ethics as the primary focus. Second, the research does not cause animals to suffer unnecessarily. Third, open access to the research is advocated, particularly if the research is funded by public money. Finally, release of the research to the media is carefully controlled, in an attempt to ensure that an unbiased, accurate account of the work is portrayed.

The research and activities performed by the CAWE are, in part, dependent on funding opportunities, but priorities for the CAWE are within the following strategic actions: evaluating current animal husbandry and industry practices; conducting objective scientific research to develop, improve, or recommend alternative management strategies to benefit the welfare of animals; monitoring and analyzing attitudes to animal welfare nationally and internationally which will or could impact on issues such as trade and live export; undertaking objective

research for animal industry or advocacy groups; enhancing the focus of animal welfare and ethics in undergraduate teaching; and dissemination of information and promotional activities. Dissemination is achieved by regular newsletters to all animal welfare stakeholders; the establishment and regular maintenance of a specific website; hosting seminars and conferences, which include public and industry forums; and publishing of significant outcomes in appropriate journals and publications and reports to the Advisory Committee and sponsors of specific projects.

Clive Phillips as Director has led the center from 2005 to present. He has developed an innovative journal (animals: http://www.mdpi.com/journal/animals) with free online access, edits a series of books on animal welfare (published by Springer), and has published several books on animal welfare (e.g., Phillips 2009; Phillips and Phillips 2012). He was assisted by a Manager, Dr Nicky Cross, in the early years, but now the center functions mainly as a loose-knit, virtual center, hosting researchers from all parts of the globe. The Deputy Director is Dr Andrew Tribe. Andrew has been Senior Lecturer in Animal Behavior and Management at UQ since 1998; prior to this he was Director of the University's Veterinary Science Farm and Senior Veterinarian at the Royal Melbourne Zoological Gardens. Other Queensland staff that have worked with CAWE include Carol Petherick, John Gaughan, Peter Murray, Allan Lisle, Steve Johnston, Melanie Latter, Deborah Walsh, and Mandy Patterson, as well as a large number of interstate and overseas collaborators. Sabbatical visitors have included Serdar Izmirli and Ramazan Col from Turkey and Javid Aldavood and Ali Ramon from Iran.

At any one time, there are about 12 Ph.D., 2 Masters, and 2 Honors students studying topics that include a range of animal species in farm, companion, and zoo settings, as well as ethics and attitudes of the public toward animals. Student achievements include K. Descovich (2009) UQ Bryan Medal for best thesis, S. Sinclair (2009) Eureka Prize for Scientific Research that contributes to animal protection, and C. Tiplady (2012) 3 min Thesis winner and People's Choice Award for UQ Faculty of Science.

Funding for research has been provided by a range of organizations and individuals, including RSPCA Australia, Voiceless, Humane Slaughter Association, Australian Research Council, Morris Animal Foundation, and livestock industry bodies. Two annual scholarships, the Humane Society International/Roz Dixon Memorial Scholarship and the Ted Eadie Memorial Scholarship, are organized by the center.

Landmark Contributions

Staff at CAWE identified the accumulation of ammonia as a welfare issue for cattle and sheep being exported on ships (Phillips et al. 2012), with the cooperation of the industry. Current research is examining the effects of ship motion on balance and stress levels in sheep. Also in relation to livestock, CAWE has detected visual lateralization in the response of cattle to people that indicates a fight/flight response (Robins and Phillips 2010). This acknowledges the frequently stressful nature of human-animal interactions.

CAWE's research with captive wild animals has often revealed that enclosures are too small and insufficiently stimulating, with the animals developing abnormal behavior as a result (Phillips et al. 2011b). Methods of alleviating this are sought. Students at the center have found that zoo keepers' personalities influence their interaction with the animals, facilitating recruitment of the most suitable individuals for this job (Phillips and Peck 2007).

Researchers at the center have identified lameness as a major issue for racehorses (Doughty et al. 2009) and aged (McGowan et al. 2010) horses. Studies with companion animals in domestic violence situations are underway, which have initially identified dogs as being more at risk than cats (Tiplady et al. 2011).

Attitudes to animals around the world are frequently studied by researchers at CAWE, leading to identification of populations and individuals having most concern about animal welfare (e.g., Phillips et al. 2012b). A connection between gender differences in concern for animals and gender empowerment of respondents has been detected.

Countries with low levels of gender empowerment do not exhibit the classical increase in concern for animals in women that has commonly observed in western studies (Phillips et al. 2011a). Similarly the identification of differences in stakeholders' concerns for welfare issues in livestock farming is new. Those directly connected with rangeland animals rate long-term issues such as nutrition as very important; others focus more on short-term painful procedures (Phillips et al. 2009).

The research at the Centre for Animal Welfare and Ethics is helping to provide the scientific information that can change animals' lives for the better. The questions about whether we should be changing animals' lives are also being addressed (e.g., Tiplady et al. 2012). The welfare of animals in current management systems is evaluated, and novel viable systems that could improve the animals' welfare are constantly being sought.

Cross-References

- ▶ Animal Welfare: A Critical Examination of the Concept
- ▶ Industrialized Slaughter and Animal Welfare

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Child Nutrition Guidelines and Gender

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Synonyms

Advice; Best interests principle; Child nutrition; Clinical guidelines

Introduction

In recent years there has been a proliferation of guidelines related to child health. Prominent among these are guidelines on child nutrition. Guidelines cover a large range of questions relating to child nutrition, from duration of breast-feeding and supplementary feeding in infancy to weaning, establishing healthy eating in toddlers, and meeting the nutritional needs of children at various stages of development.

Guidelines are used in professions such as medicine as a means of communicating evidence-based statements about best practice and encouraging quality improvement and reduction of unwarranted variation in practice. There is significant debate about the authority of professional guidelines, and in particular questions are raised about the conditions under which divergence from guidelines is permissible. Many child nutrition guidelines are ultimately intended to influence parental, rather than professional practice. The practices that child health nutrition guidelines address occur within the private sphere and relate to feeding practices that may carry deep cultural and familial significance. The status and authority of guidelines directed at families is even less certain than in the case of clinical guidelines. Child nutrition guidelines can be viewed not simply as pieces of advice that parents may act upon according to their own judgment but as assertions of best practice against which parental practice is evaluated. Child nutrition guidelines can inform parental assessments of their own practice and those of others, and as such they become instruments for attributions of praise, blame, and the moral emotions of pride and guilt. The feelings of guilt and shame that many women who do not breast-feed for the recommended period report illustrate the power that guidelines have to set effective parenting standards.

The standard-setting dimension of guidelines raises a number of ethical issues including concerns about the normative status of guidelines, resourcing in support of adherence and industry influence and the integrity of guidelines. This entry will introduce clinical guidelines, describe the relevant differences between clinical guidelines and those that target parental practice, and address each of the ethical issues indicated above.

Clinical Guidelines

Clinical guidelines have become an increasingly common feature of the medical practice landscape since the 1980s. The Institute of Medicine (a division of the National Academy of Sciences that provides independent advice to decision-makers and the public about matters relating to health) offers the following definition:

> Clinical practice guidelines are statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options. Rather than dictating a one-size-fits-all approach to patient care, clinical practice guidelines offer an evaluation of the quality of the relevant scientific literature and an assessment of the likely benefits and harms of a particular treatment. This information enables healthcare providers to proceed accordingly, selecting the best care for a unique patient based on his or her preferences. (IOM 2011, p. 1)

The rise of clinical guidelines is a response to a number of developments. Scientific research has increased in quantity and availability, but it is difficult for clinicians to keep abreast of emerging research and to assess its implications for practice. Alongside this, there is strong demand for improved quality of care and reduction of unwarranted variation in quality and availability of care provision. Guidelines encapsulate the existing evidence about a defined question and draw recommendations for clinical practice out of that evidence. In this way, they make evidence accessible to clinicians and support greater consistency of care, not by eliminating variation but by providing an evidence-based standard against which decisions about patient care can be reached. The idea is that variation in care will not reflect inaccessibility or misinterpretation of relevant evidence, but will instead reflect professional and patient discretion in individual circumstances.

Clinical guidelines have excited controversy on a number of grounds. They have been

identified as a means of rationing care and limiting the over-treatment associated with defensive medicine. They have also been seen as a means by which sub-specialities may attempt to claim clinical territory. A large industry in guideline generation has emerged, with guidelines being issued by a wide variety of professional bodies, scientific institutes, employers, and other organizations. In some areas of practice, they have multiplied at an astonishing rate. Some have been found to contain conflicting or misleading statements. The development process has undergone considerable scrutiny. There is also debate about the use of guidelines as evidence in court proceedings for medical negligence or malpractice. A guideline may be used as a "sword" by which to inculpate clinicians if they fail to adhere or as a "shield" to exculpate a clinician whose practice complied with a guideline. The matter of how courts should regard guidelines has been discussed in medicolegal literature (Tingle and Foster 2002).

The Status of Clinical Guidelines

The IOM's definition makes clear that guidelines are intended to permit variation, in deference to professional expertise and in recognition of the need for discretion to which variation in clinical circumstances gives rise. Guidelines are not rules that must in all instances be followed. But neither are they wholly optional. Guidelines occupy an uncomfortable middle-ground between rules and advice.

When a rule is issued by a legitimate authority acting within its sphere of authority, the rule creates an obligation in those to whom it applies. The rule-maker is entitled to demand compliance and to hold violators to account, possibly reprimanding or imposing punishment for noncompliance.

In contrast, advice, as classically construed, can be characterized as the supply of nonenforceable reasons for action. In giving advice, an advisor implicitly acknowledges that the advisee is entitled to act according to his or her own judgment in this matter and that the advisor is not in a position of control. Unlike rule-makers, advisors cannot legitimately enforce compliance with their advice nor hold advisees to account. Advisees can reject advice without owing an explanation to their advisors.

The claim to professional consideration that guidelines assert is greater than the claim associated with advice. Arguably, clinicians are obliged to keep up-to-date with guidelines issued by relevant authoritative sources (such as professional bodies and employers), to consider them and to employ them in clinical deliberations. Professionals may be held to account for nonadherence, in the sense that they must be willing to justify divergences. Clinical guidelines issued by authoritative sources command a greater attention than advisors are permitted to demand for their recommendations. But, unlike rules, they do not command "obedience." Failure to adhere with a guideline would only constitute grounds for reprimand or disciplinary action if the relevant professional was unable to justify nonadherence and an adverse outcome had resulted.

Clinical guidelines vary in the authority of their contents and their provenance, and their claim to professional consideration varies correspondingly. The authority of a given guideline in a given clinical circumstance will often be a matter of debate, but it is clear that medical professionals are not free to disregard clinical guidelines entirely. Professional status and the privileges associated with it are earned and maintained through demonstrated satisfaction of professional requirements. The trust that the public places in professionals is parasitic upon public trust in the regulation and maintenance of standards by professional bodies such as medical colleges, councils, and licensing boards and employers. This entitles these bodies to set standards governing practice and to identify and foster given goals and values within the profession. Professional bodies are entitled to impose rules upon their members, discipline violations, and strip unsuitable individuals of their professional status. Guidelines, even when issuing from authoritative sources, are not the same as rules, but they can be the subject of rules: the United Kingdom's General Medical Council's *Good Medical Practice* guide stipulates that "You must be familiar with guidelines and developments that affect your work" (GMC 2013, p. 6).

Guidelines for Child Nutrition

Child nutrition guidelines occupy more uncertain territory still with respect to their authority. Some child nutrition guidelines are directed primarily at professionals, because they relate to clinical matters (such as perioperative fasting, food allergy, or nutritional support of a seriously ill child). Many others are intended to inform parental, rather than professional, practice. Some such guidelines comprise technical assessments of evidence to inform professional advice to parents; others consist of simplified summaries of evidence and include recommendations aimed directly at parents. Many health-related governmental agencies issue child nutrition guidelines, although, tellingly, some prefer term such as "advice," "tips," or "recommendations" to "guideline." The focus here is on those guidelines that are intended to inform parental practice.

Similar factors informing the increase in clinical guidelines apply in the context of child nutrition. Scientific evidence about nutritional risk and protective factors is increasingly available but its implications for child nourishment are not easily discernible by parents. Guidelines provide a means of gathering together evidence and distilling it into practical recommendations. Child health guidelines share with clinical guidelines the aim of reducing unwarranted variation in practice. Some parental practices reflect a lack of information and understanding of child nutrition; guidelines can help to eliminate variation that reflects a lack of understanding, rather than considered parental choices.

Like clinical guidelines, child nutrition guidelines are not a set of rules. As such they accommodate and acknowledge parental discretion. But, as with clinical guidelines, child health guidelines are aimed at persons who are not free of duties with respect to the matters they address. The duties that underpin parenting have implications for the status of guidelines.

The assumption of care for a child carries both moral and legal duties. There is a great deal of controversy about what duties parents have and about how, and if, they should be enforced. The Best Interests Principle, contained in Article 3 of the United Nations' Convention of the Rights of the Child and enshrined for use by courts and child protection agencies in many jurisdictions, including England and the United States, is too demanding and contestable to apply in any literal way to all familial activities and parental practices. This is so even if the focus is on the content of the moral duty, rather than its enforcement. Parents are morally permitted to make decisions that fail to optimize a child's interests in order to serve a legitimate end, as long as that child's interests are served "well enough." The claim that parents have a moral duty to protect and promote their children's interests to a "minimally adequate" level is tenable (Archard 2004). However, what counts as "minimally adequate" is contestable. As child nutrition is shown to have potentially profound implications for health and functioning throughout life, child nutrition practices could be drawn into the orbit of parental duty. But whether parents have a duty to attend to child nutrition guidelines is less clear.

If guidelines encapsulated parental duty, there would, by extension, be a duty to attend to them. But it is not clear that child nutrition guidelines are intended to, or do, follow the contours of parental duty. Guidelines could be statements of best practice, as discernible by reference to scientific evidence. If parents are not duty-bound to adopt best practice, attendance to them may be purely discretionary. However, clinical guidelines are often regarded as statements of best practice, but attendance to them is not purely discretionary: clinicians must keep up-to-date with relevant guidelines and be willing to defend divergences. Might parents also have a duty to refer to guidelines, to reflect on them, and to be willing to defend divergences, even if this is not a duty that the state should, or would attempt to, enforce?

Clinical guidelines are subject to a duty of attendance rather than one of compliance. This duty is imposed by professional bodies (including employers). If child nutrition guidelines are subject to a duty of attendance, rather than one of compliance, where does this duty stem from?

Here there is a relevant difference between child nutrition guidelines and clinical guidelines.

Clinical practice is governed by both professional bodies and employers, and their authority to set standards governing clinical practice is established. Parents do not become parents through admittance to a professional organization, membership of which entails acceptance of its authority. Arguably, parental duties arise from undertakings to one's child, rather than to an authorizing body. If parents have a duty to attend to guidelines, it must be either because their duty to their child entails this or because it has been imposed by an authorized third party.

The state has the authority to impose duties on parents. States are widely acknowledged as having a role as protector of vulnerable members of society, including children. This is often referred to as parens patriae: a Latin term meaning "parent of the nation." This role entails the state's right to assume control where necessary to ensure that children receive adequate care. The state is empowered to pass laws that constrain parental choice, on the grounds of the interests of the child. Laws requiring use of child safety restraints in motor cars and prohibiting physical chastisement of children (as in New Zealand) and smoking in cars containing children (as in Australia and some states in the United States, such as Arkansas, Oregon, and Maine) exemplify the exercise of this power.

Currently child nutrition guidelines do not have formal legal standing and are unlikely to receive it, unless there was a clear case that failure to adhere to a given guideline was associated with a demonstrable and serious harm to children.

Unlike clinical guidelines, child nutrition guidelines are not made the subject of an explicit duty by an external, authorizing body. The inherent contestability of parental duties means that whether there is a moral duty to attend to guidelines, or to comply with a specific guideline, is also contestable. As it currently stands, child health guidelines are more akin to pieces of advice, subject to parental evaluation and discretion, than they are to rules. But that does not prevent them from exerting significant moral and social force on parents and particularly upon mothers.

The Normative Status of Child Nutrition Guidelines

Although a noncontroversial account of parental duties eludes philosophers and states, parents typically want to do a good job and look for sources of support and information to this end. While the status of child nutrition guidelines and the relationship between them and parental duties are unclear, they still exert a palpable force upon many parents and upon social understandings of good parenting.

Advice is directed at parents from myriad sources, particularly during pregnancy and the early years of parenthood. It is common for parents to exchange and discuss information relating to their children, and standards, norms, and expectations can be set not only through direct advice-giving but also when information from a third-party source is relayed ("my midwife says," "have you read the latest advice about fructose?. . .") and when parents relate their own practices to other parents (Fuligni and Brooks-Gunn 2002). Ideas about parenting are not only relayed in conversation but established through experience from childhood onward (Mechling 1975).

Mothers do the bulk of the heavy work when it comes to sourcing, fielding, assessing, sharing, and acting upon advice about child health (Kukla 2006). While role sharing is now more common and although power and resourcing does not always accompany responsibility, women are still more likely to be assigned primary responsibility for children's diets. Of course, the women who oversee these aspects of childcare are not always, or only, mothers: grandmothers, mothers-in-law, aunties, and other senior female figures have significant influence in many social contexts (Richards et al. 2013).

Motherhood is a normatively charged identity category, associated with powerful and deeply rooted ideals. The controversy surrounding philosophical accounts of parental duties has not produced widespread unwillingness to judge parents. Rather, multiple, sometimes conflicting ideals circulate, facilitating moral maternal evaluation and self-evaluation.

In societies where scientific knowledge carries a credibility premium, child nutrition guidelines have special force to set effective parenting standards. They offer the promise that adherence represents best practice, as identified through an objective and rigorous process of scientific discovery and evaluation. Health-care professionals and childcare workers use child nutrition guidelines to advise mothers, affirming their practice when it adheres to guidelines and encouraging change when it diverges. The fact that a practice is recommended in guidelines can be cited in defense when others question or criticize maternal practice, for instance, for diverging from tradition. Mothers may feel guilt, self-blame, and a sense of failure when they fail to fulfill guidelines or may feel the need to rationalize the failure, perhaps emphasizing the changeability of advice as a sign of its unreliability. Women's sense of their own performance as mothers, and of their standing in the eyes of others, can be powerfully affected by the advice that circulates around them. The standing of child nutrition guidelines as definitive statements of best practice elevates them above other sources of advice for many parents: they are standards worthy of adoption, and mothers may be evaluated upon that basis.

The promulgation of the message that "breast is best" illustrates the prominence and power of child nutrition guidelines. Numerous studies report that this message has achieved wide recognition and influences feeding intentions and women's feelings of pride if breast-feeding goes well, and guilt and shame if they elect not to breast-feed or do not continue to feed for the recommended time frame. But guilt and shame can also accompany breast-feeding, given societal expectations of modesty and associations between breasts and sexuality (Taylor and Wallace 2012).

Despite the social mores women navigate, the evidence in favor of breast-feeding is presented as definitive: breast-feeding offers babies the best possible start in life, and mothers are judged on their willingness and ability to give their children the best possible start in life (without infringing upon the expectations of others).

Some women report feeling pressured to breast-feed (Hoddinott and Pill 2000) and use of terms such as "successful breast-feeders" compounds the normative force of these guidelines (Burns et al. 2010). Breast-feeding guidelines also apply in antenatal care and midwifery. Hospitals, health providers, and professional bodies may adopt policies and guidelines that require clinicians to promote breast-feeding and reduce women's access to support with bottle-feeding. Some midwives report "breaking rules" in order to support mothers who choose to or require bottle-feeding (Furber and Thomson 2006).

While guidelines formally preserve parental choice with respect to child nutrition, they can exert significant pressure, influencing parental perceptions of available choices and attributions of praise and blame. Moreover the reasons that child nutrition guidelines are not adhered to are not necessarily reducible to parental choice (Kukla 2006).

Supporting Adherence to Child Nutrition Guidelines

The purpose of child nutrition guidelines is to enable mothers to make evidence-based decisions that affect their child's health. The thought is that knowledge enables: if mothers know what is best for children, they are better placed to secure it.

This thought can be challenged. While knowing what is best, and what is bad, for children, can help parents, it can only do so if what is best is within their power to secure. The costs of adherence may be prohibitive. Guidelines may advocate an unaffordable or inaccessible diet; other commitments may compete for time and energy; guideline adherence may provoke intrafamilial or intracultural conflict; co-parents may prevent adherence; social considerations (such as social disapproval of breast-feeding) or past history may increase the difficulty of adherence, to the point of effective impossibility.

It could be argued that the non-compulsory nature of guidelines offers sufficient recognition of legitimate obstacles to universal adherence to guidelines. But guidelines also effectively set best practice standards. Nonadherence can stigmatize, potentially increasing inequalities when

ability to adhere varies across social and economic groups (Goldberg 2012). If adherence to guidelines is not a straightforward matter of "parental choice" and child health is a goal worth pursuing, a social commitment beyond dissemination of recommendations may be required.

Industry Influence and the Integrity of Guidelines

The potency of child nutrition guidelines derives from their grounding in scientific evidence. The idea is that while parents have their own beliefs about what is best for their children, these beliefs are based on unreliable sources such as subjective assessments and inherited wisdom and may not be borne out by well-constructed, objective testing. Determining what is good for children requires more than guesswork; guidelines offer recommendations grounded in more reliable evidence than that standardly available to parents through experience, reasoning, and domestic experiments alone. Guidelines prepared for parental use are largely stripped of the scientific evidence base that renders them so influential. Parents are asked to trust in the integrity of the research underwriting them and the organizations preparing them.

The professed objectivity of guidelines and the implicit claim that their purpose is to assist parents to make the best possible nutritional decisions for their children are crucial components of their integrity. The involvement of vested interest groups, such as food manufacturers, would limit their trustworthiness: the possibility that the interests of these groups influenced the guidelines could not be discounted.

Links between industrial interests and nutrition guidelines have been documented. Some advisory organizations (such as the Academy of Nutrition and Dietetics) receive funding from industry (Nestle 2001). Industry lobbies committees and government agencies that prepare and issue guidelines (Nestle 2002). Furthermore, much of the research that guidelines draw upon receives industry funding. Several studies have shown a link between research findings and funding (Lesser et al. 2007). Commercial attempts to influence child nutrition advice are not new: the new infant food companies courted dieticians' favor in the 1920s (Bentley 2005). Industrial influences compromise the perception of child nutrition guidelines as trustworthy and worthy of parental attention.

Summary

While parental duties with respect to child nutrition guidelines are disputed, they provide a measure by which mothers, as primary carers, can be evaluated, both by themselves and by others. This raises ethical questions about guidelines' suitability as measures of maternal success. In particular, the support that mothers receive to adhere to guidelines and the trustworthiness of guidelines are matters that require attention.

Cross-References

- ▶ Feeding Children
- ▶ Infant Feeding
- ▶ Marketing, Food Policy, Diet, and Health
- ▶ Pregnancy and Food

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Chinese Agriculture

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Synonyms

Agricultural history; Agriculture and environment; Chinese agronomy; Crop systems; Cultivation; Farming

Introduction

Chinese agriculture is one of the oldest agricultural systems and one of the most influential, having contributed cultivars, techniques, and land management systems to neighboring peoples. Chinese agriculturalists have proven incredibly resilient. Adopting foreign cultivars and technology, such as wheat, the plow, and tea, they modified and expanded existing methodologies to transform an extensive, dryland agriculture into a multifaceted agricultural system including wet- and dryland crops, tree plantations, floating fields, and inland aquaculture. In doing so, Chinese farmers, historical and contemporary, have also had to grapple with significant ethical, social, and environment challenges. Long-term erosion, siltation, and flooding have been compounded, since the beginning of the twentieth century, by the social, economic, and environmental aspects of industrialization, intensified rural poverty, and the relative weakness of local administration. Today the ethical relevance of Chinese agriculture reflects a highly populated but changing rural–industrial society and is informed by technical, political, environmental, and social concerns associated with cultivation, including issues of land ownership and tenure, shifting agrarian policies, environmental degradation, and labor out-migration and gender inequalities, among other issues.

Chinese Agriculture: An Historical Overview

Chinese agriculture began around the seventh millennium BCE in what is now northern China. Utilizing loess soils and mineral-rich windblown and glacial deposits, early farmers cultivated millet, wheat, barley, and soybeans (Ho 1969). In this phase, Chinese farmers faced important practical and environmental limitations. First and foremost, farmers struggled to retain soil water content, sometimes cultivating in shallow, man-made pits to preserve moisture. Second, staying warm during cold winters, coupled with gradual population growth, meant increasing

consumption of forest resources. The results were land clearance, deforestation, and erosion. The region's rich soil thereby slipped into the Yellow River leading to rising water levels within the riverbed. This in turn required expensive, large-scale intervention in the forms of dredging and enlarged, reinforced embankments.

During the Han dynasty (206 BCE–220 CE), many of the major themes and crises of Chinese agriculture and ecology emerged: land agglomeration and the crisis of land access, the question of acceptable tax levels, flood damage and the necessity of government intervention, regional food scarcity requiring substantial infrastructure for distribution of food aid, farmer poverty, and agrarian protest. In these instances, the government was forced to reduce and sometimes suspend taxes while at the same time open granaries, issue loans, or provide seed, tools, and funds. In extreme instances, government land was loaned to farmers for cultivation (Hsu 1980).

With the building of the Grand Canal, a man-made waterway connecting the Yangzi and Yellow river valleys, during the Sui (589–618 CE) and Tang (618–908 CE) dynasties, the Chinese state successfully connected northern and southern Chinese agricultural zones. In doing so, the dryland dominated north and wetland dominated south could exchange their products more readily. This enabled the collection of government tax grain as well as allowed for greater levels of market exchange. The Grand Canal should not be understated. Through it, the state could facilitate grain transfers, generally shifting southern rice surpluses toward northern grain scarcity.

Tang dynasty territorial expansion incorporated a greater swath of agricultural lands in the south, allowing migration and the enlargement of extensive agricultural methods. Initially, draft animal use increased, as did that of plows and harnesses. New seed drills were introduced which permitted the sowing of seeds simultaneously with an application of dung. Animal and human manure had become commodities by this time. Under this extensive agricultural regime, farmers multi-cropped, harvesting three crops in 2 years. They constructed framed or floating fields, mounds of earth suspended over wooden frames and mounted within rivers and lakes, which allowed for greater food production without adding season-long labor requirements. To facilitate the development of southern lands, local elites financed and maintained drainage and irrigation projects. The state, in an effort to reform agriculture, provided loans at lower rates of interest and replaced corvée with tax payment. The state attempted to rectify tax rolls to increase tax revenues but did not address land centralization and tenure. Although tax rates remained low, somewhere around 10 %, tenants continued to pay 50 % of their yields in rent, even more if they rented oxen and plows (Chao 1986).

During the following dynasty, the Song (960–1279 CE), the introduction of a new rice variety, Champa rice, reconfigured grain availability by drastically expanding China's rice production. Champa rice is known for being a drought- and flood-tolerant, insect- and blight-resistant strain which grows well on marginal soils. Because of its ability to grow on dry- or wetland, as well as its maturation in 100 days, roughly half the time needed for short and medium grain rice varieties, Champa rice made a significant contribution in alleviating famine and scarcity (Ho 1956).

Outside of grain production, Champa rice contributed to Chinese agriculture by emphasizing the importance of grain selection. Agriculturalists increasingly sought to find, and produce, varieties which matured in shorter periods, or which possessed specific traits. Farmers thereby produced or discovered in the eleventh and twelfth centuries varieties which matured in as little as 60 days. These varieties had lower yields but performed well on marginal soils enabling farmers to expand cultivable acreage. By the eighteenth century, there were 3,525 documented rice varieties (Deng 1993).

In the Yuan (1279–1368 CE) and Ming (1368–1644 CE) dynasties, techniques for digging ponds improved, increasing the supply of water and land productivity. Better pond technology facilitated double cropping of wet- and dryland crops through improved water management. At the same time, in other parts of China, the

adoption of more efficient crop rotations corresponded with a gradual decrease in farm sizes. The preference of landlords to divide large land holdings into plots workable by family units reconfigured the countryside into small fields rather than large tracts. Small fields, farmed intensively, discouraged animal-powered farm equipment and rewarded labor investment (Elvin 1982).

The application of labor-intensive agricultural methods, steady rates of land reclamation, the gradual improvement of agricultural implements and techniques, the importation of New World crops, and the continuing spread of best-practice agriculture collectively continued to fuel the growth of population and the economy. China's population had been around 100 million in the mid-seventeenth century. Around 1900, it neared 400 million. The quadrupling of population in a 250-year period was enabled on the one hand by a doubling in rice production between 1000 CE and 1850 CE and on the other by the introduction and dissemination of crops such as maize, sweet potato, and peanuts. Where rice accounted for 70 % of China's national food output in the early seventeenth century, in the 1930s it was 36 %. American food plants by then accounted for 20 % of China's gross output (Ho 1959).

The cultivation of New World crops was in complement, rather than in competition, with China's dominant grains. Because sweet potato and maize grew on soils less ideal for rice, wheat, or millet and could be cultivated on sloping lands where terracing was uneconomical, these crops allowed for an expansion in cultivated acreage and food supply without decreasing other grain production. However, the cultivation of these alternative soils, with the goal of short-term profits, facilitated practices which can best be described as deficit farming. At first farmers and landlords negotiated leases for lands which had not been in demand, leaving landlords feeling they were getting something for nothing. Cultivators then cleared and farmed the land without concern for soil preservation; the remaining soil was then susceptible to erosion. Over time, these practices contributed to China's agricultural expansion, population increase, and environmental degradation, especially in the mountains and along their connected waterways (Averill 1983).

Chinese Agriculture: Today

The commune system (1958–1978), through which farms and farmers were collectivized, ended through a series of reforms in the late 1970s and early 1980s. Under these reforms, China has experienced renewed agricultural growth rivaling advanced industrial economies. From the late 1970s to today, Chinese agriculture has seen an exponential rise in terms of the quantity and value of its goods. Yet while agriculture was a leading sector during reform, today it is increasingly marginalized. Moreover, it continues to face challenges of historical origin. Farmers retain land holdings too small to enable them to access the financial resources of credit and insurance markets. Without these, agriculturalists do not have the funds needed to improve their agricultural productivity (Song and Chen 2006). Chinese farmers are also threatened by the weakness of their legal rights to property. Because of ambiguities pertaining to land ownership and land tenure following the end of the commune system, farmers have been unable to assert, directly or through rural collectives, the rights of landowners. Rights of land tenure, the ability to buy, sell, and profit from one's land, are not effectively outlined. The result is that, since the 1990s, there is a growing trend toward landlessness resulting from the encroachment of government eminent domain, private land enclosure, and land sales, as conducted by local officials (Hong 2006).

Agrarian Reform and WTO Membership

Under the commune system, local leaders decided what was cultivated. Farmers, on the other hand, possessed autonomy over crop selection generally only in regard to small plots near their homes. Local leaders made their decisions based upon plans given to them by higher-level

officials. According to these plans, rural leaders were required to meet specific quotas in specific commodities. This system intended to create agricultural surpluses which could be shifted throughout the country, especially to areas of need, while keeping agricultural commodity prices low and facilitating industrial transition (Lohmar et al. 2009). However, such organization and state policy, without strong oversight, created a potential for overreporting which contributed to one of the largest famines of the twentieth century under the Great Leap Forward (Perkins 1991).

In 1978, a series of national reforms began which included significant alterations to Chinese agriculture. Under the Household Responsibility System, villages allocated collectively owned land to households through leases. In this system, farmers paid quotas of designated crops and in turn received fixed payments. Farmers were permitted to determine which crops to plant after allocating sufficient space to the crops demanded in payment of the lease. This enabled farmers to cash crop, focus on livestock, and sell surpluses directly to the market. The result was an initial step in reinvigorating the rural economy, as it directly resuscitated rural markets. Farmers benefited from this transition, and in response to early success, land and labor practices shifted to meet market demands. The overarching result was growth in farm family incomes, increases in cash crop and livestock production, new demands for marketing, and a gradual escalation in nonagricultural income among rural households (Lohmar et al. 2009).

With the integration of the Chinese economy into the World Trade Organization (WTO) in 2001, state-owned trading enterprise dominance over agricultural products eased through lowering tariffs and trade barriers on agricultural products. At the same time, China's inclusion in the WTO came with member-approved subsidies. China originally sought a subsidy equivalent to 10 % of the value of national agricultural production. However, WTO members, in line with the restriction for industrialized countries, wanted China's subsidy to remain at 5 %. The approved rate rests at eight and a half percent, a figure which reflects the government's overall ability to intervene in the market (Dang 2006; Lu 2006).

WTO membership has encouraged significant alterations in agrarian state policy as well as in production. The government's tenth Five-Year Plan (2001–2005) emphasized that agriculture should be given priority in national economic development to ensure sustained and steady growth in farmer income. Starting in 2003, the government gradually began to reduce taxes on special agricultural products. In March 2004, a plan was announced to gradually remove taxes on all agricultural products. The removal of taxes on farmers for their agricultural commodities indicates a profound shift in production and state view. It reflects the necessity of state support to maintain a balance between farmer income and consumer prices. It also conveys the decreasing importance of agricultural production in terms of gross domestic product. That China can now afford to allow agriculture to go untaxed indicates a new stage in China's agricultural history. Yet even with the reduction of state taxes on agricultural production, farmers are not tax free. Local fees and levies remain in place. They vary by locale, as they remain at the discretion of local officials. Such fees are intended to finance medical care, schools, town- and village-level administration, as well as public facilities. Even with the reduction and removal of state taxes on agricultural production, local dues and local fees remain the larger concern as they can become a greater burden (Lu 2006).

Production, Producers, and Agricultural Improvement

Since reform, Chinese agriculture has experienced nearly three decades of increasing yields. In 2005, agriculture accounted for roughly 12.5 % of China's annual GDP. Although this figure is small, it reflects a 336 % increase in output since 1978 (Dang 2006). In terms of grain production (rice, wheat, and maize), 247 million metric tons of grain were produced in 1978. By 2008 the figure was 470 million metric tons. This increase reflects intensive

land-use cultivation and has occurred without substantial mechanization. Especially notable growth has been occurring in maize production, which is utilized in China's livestock and industrial sectors. Growth has not been even across all agricultural sectors. Livestock and fishery production had increased substantially, from 15 % and 1 % of overall agricultural output in 1978 to 33.7 % and 10.2 % in 2005. These changes reflect the growing availability of animal proteins, particularly pork and eggs, at the cost of grain production. Today, China is the world's largest rice-producing country and is a net exporter of rice. It is also a net exporter of vegetables, fruits, and aquatic products. In most years, China is a net importer of wheat and soybeans as well as cotton, palm, and soybean oils (Dang 2006; Lohmar et al. 2009; Sonntag et al. 2005).

According to the 2007 agricultural census, there were 200 million farm households on an estimated 122 million hectares (494 million acres), averaging 1.5 acres per household. Reflecting the land tenure of the Imperial Period, these small holdings remain divided into small plots unevenly dispersed. Intensive practices, high levels of fertilizer application, double- or triple-cropped fields, and extensive irrigation characterize these farms. On this scale, Chinese agriculture is able to make use of capital-intensive chemical inputs, such as fertilizers, pesticides, and herbicides, but mechanization remains limited. As land and water limitations increasingly make themselves apparent, it is unclear whether production can continue to increase within the current structures of land holding and family labor practices (Lohmar et al. 2009).

In 2005, 745 million or more than half of China's 1.3 billion people were living in rural areas. Two-thirds were employed in agriculture, animal husbandry, and fishing (Dang 2006). In terms of rural labor, scholars note two trends which indicate significant social and cultural challenges: rural out-migration and gender inequalities. Rising urban–rural income disparity is a leading factor behind emigration. Reduced accessibility to education, urban-biased investment, and insufficient rural credit contribute by intensifying an urban–rural divide, which remains in cities' favor (Lu 2006). There is also a perceivable male–female wage gap. In terms of work itself, women are being left to tend fields, are given inferior access to off-farm employment, and earn less for on-farm work (Rozelle et al. 2006). Although China has one of the highest female labor force participation rates in the world, with about 84 % of women (ages 15–60) in the labor force, and women comprise about 45 % of the entire labor force, women tend to work at lower levels. Some scholars argue that discrimination against women has increased in the reform period in terms of recruitment, layoffs, and required early retirement. Others are more positive, seeing greater inclusion of women in labor and greater opportunities post-reform (MacPhail and Dong 2006).

Potentially related to changing labor availability, several trends are emerging in land use within the current system. Cropped acreage is decreasing while land assigned to pasture and grassland is increasing. A growing demand for meat is in part responsible, as the price of animal products has increased correspondingly (Dang 2006). Yet the requirements of animal husbandry are also a factor. Livestock management requires less labor than intensive grain production, allowing farm families to diversify their approach to the developing market economy.

In terms of state support, the decreasing value of agriculture to overall national wealth has put pressure on research and development as well as extension services, the local, regional, and national offices that research and disseminate information intended to improve agricultural production. Increasing funding to the extension service has grown progressively difficult to rationalize. In part, there are structural reasons underlying this funding problem. The extension service remains overstaffed with little coordination between the central and substations, allowing for redundancy in research. Many employees spend only a fraction of their time on extension work, instead pursing topics of little interest to farmers. For these reasons, recent changes to the extension service have made

raising funds to support agricultural research institutes the responsibility of the institutes themselves. The matter is further complicated because of a lack of private institutes and private funding. Because extension services are a public endeavor, their status is central to discussions of ongoing agricultural improvement (Sonntag et al. 2005).

Connected to the issue of the extension service is that of farmer associations. As of 1995 there were around 100,000 farmer associations yet participation was quite low. Even with government initiatives to promote them, especially through a revision in 2002 to the Agricultural Law which provided a legal basis for their development and sanctioned them as legitimate providers of services to members, current estimates place 2–3 % of households as participating. This can be explained through their location. Despite the high number of active societies, only 7 % of villages have functioning associations, and many are congregated in regions which specialize on high-value crops and livestock (Sonntag et al. 2005). Thus what these figures indicate is a potential for infrastructural development. Farmer association and extension work, if extended to more villages and farmers, may facilitate future gains.

Summary

Associated with millennia of agricultural production, but especially the previous three decades of industrialization, specific environmental challenges have developed in China. Today Chinese agriculture approaches the upper limit of its ability to supply greater quantities of food and faces an assortment of grassland degradation, soul erosion and nutrient loss, atmospheric contamination, air and water pollution, and solid waste disposal issues. As China's population continues to rise, increased pressure will be placed on the reclamation of marginal soils, furthering these processes and outcomes while intensifying trends toward salinization and desertification. Addressing these challenges will require significant alterations and reforms to existing policies and practices. Many scholars agree that comprehensive land reform is necessary, to emphasize farmer tenure, to declare firm property lines, to allocate water access, and to institute overall water safety and control mechanisms. To conserve soil and prevent erosion, recommendations include the wide-scale adoption of hedgerows into annual and perennial cropping systems, the utilization of rotational grazing, and diversified crop rotations as well as conservation tillage systems, including the conversion of fragile land to grassland or forest. To lower water and soil contamination, fertilizer and pesticide applications should be reduced through pest management strategies and optimized fertilizer applications. Improvements in forest management and replanting programs, and continuing reform of the extension service, require increased support to strengthen their services to farmers throughout China rather than specific regions (Dang 2006; Lohmar et al. 2009; Sonntag et al. 2005; Qu and Li 1994).

A survey of Chinese agriculture and its history reveals a narrative of farmers and farming which has successfully adapted to a variety of natural and human-centered challenges, supplying its own people, its region, and the world with highly valued and essential agricultural commodities. While there are many things to learn about the interactions between farming and the environment, Chinese agriculture poses potential lessons for contemporary farming practices. Perhaps the greatest are the value of adaptation and the latent benefits of labor-intensive practices. These appear to be integral parts of what very well may be an alternative model of agricultural improvement.

Cross-References

- ▶ Climate Change, Ethics, and Food Production
- ▶ Economy of Agriculture and Food
- ▶ Population Growth
- ▶ Trade and Development in the Food and Agricultural Sectors
- ▶ Water, Food, and Agriculture

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Chocolate: Ethical Dimensions

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Introduction

> *All you need is love. But a little chocolate now and then doesn't hurt.*
> Lucy Van Pelt

Like many human foods that require some processing, it is hard to know what was the mental process that led some Native Americans in what is now called Central America to convert the seeds inside a cacao pod to a desirable drink some 3,500 years ago. Somehow it happened, and chocolate became a thread that can be followed through the rise and fall of empires, the expansion and decline of corporations, and the shifts in dominant food regimes from nation-states to corporate producers to food activists. Like many desirable substances, chocolate has been the focus of ethical and moral questions for at least the past millennium. At different points in time and at different places, chocolate has implicated all of the ethical issues of justice and rights, autonomy and consent, care and harm, and sovereignty and egalitarianism. This entry will provide an overview of the various ethical issues that over time have been implicated in the production and exchange and consumption of chocolate.

In order to establish a foundation so that the subsequent sections will be more comprehensible, the first section will provide a brief background of the biophysical and social processes that have combined over time to create the chocolate value system. The second section will describe the ethical issues that are implicated in the social relationships between the production and the consumption of chocolate. While the third section describes ethical aspects of the social relations of production including manufacturing, the fourth section outlines ethical aspects of the ecological relations of production.

Ethical issues in the social and economic relations of exchange are the topic of the fifth section, while ethical dimensions of the modes of consumption are the focus of the sixth section. After a brief discussion of appropriation and substitution in the seventh section, the eighth section concludes the entry with a discussion of ethical activism along the value chain.

Background

> *Well, folks, it looks like we're up chocolate creek without a popsicle stick.*
> The Gingerbread Man

Chocolate comes from the small tropical tree *Theobroma cacao* L. of which there are three varieties – Criollo, Forastero, and Trinitario; "theobroma" comes from the Greek word for "food of the gods," and "cacao" comes from the name for the plant ("kakaw" or "kagaw" or "cacahuatl") in several Mesoamerican languages. The fruit of the tree is a pod containing a sweet pulp surrounding 30–50 seeds or beans. It was domesticated in the Amazonian basin of northeastern Peru, probably accidentally and probably for the pulp surrounding the seed that was either consumed directly or fermented (Clement et al. 2010).

The pods are harvested during a large portion or all of the year manually using a curved knife on a long pole. The pods are opened, and the cocoa seeds and pulp are removed and kept in piles for several days, during which the pulp ferments and runs off. Next the wet beans are fermented for several days and then dried for several more days, either in the sun or with artificial heat, after which the beans are polished with dry clay and shipped to one of the countries where chocolate is produced (Federation of Cocoa Commerce n.d.).

In a factory the beans are roasted, cracked, and deshelled to produce the small pieces called nibs, which are then ground into a thick paste ("chocolate liquor" or "cocoa paste"). The process splits into two tracks at this point. First, the liquor can be separated into cocoa powder and cocoa butter. Second, sugar and cocoa butter can be added to the liquor; the mixture is then refined, conched, and tempered to make chocolate.

Currently chocolate is used as an ingredient in industrial food manufacturing, for home cooking, and for ready-to-eat products. For the first 25 years of the Hershey Company, its products (powdered cocoa, chocolate syrup, chocolate chips) were solely for industrial consumption. Whereas the National Cookbook of 1856 in Philadelphia uses chocolate only to make a hot drink, in 1861 in England Mrs. Beeton's Book of Household Management included a recipe for chocolate souffle, and the Century Cookbook of 1899 in New York uses chocolate to make puddings, fillings and frostings, as well as hot drinks.

In 1842, Whitman's was the first chocolate candy company in the USA. During the last 5 years of the nineteenth century, the Hershey Company was the first firm in the USA to develop milk chocolate, which was sold first in a milk chocolate bar and then as the iconic Hershey Kiss in 1907. In 1923 after 3 years of research, the Mars Company began selling the Milky Way candy bar. Nestle entered the chocolate sector with the acquisition of Peter, Cailler, Kohler Swiss Chocolate Company in 1925.

Currently cocoa beans are produced commercially in more than 20 tropical countries, with Cote d'Ivoire, Indonesia, and Ghana accounting for approximately two-thirds of total production volume and value (FAO 2013). Currently most beans are exported to firms in the North to be roasted and ground; two of the top three grinders globally, Cargill and ADM, are commodity traders; only one, Barry Callebaut, is a chocolate firm. Wikipedia currently lists 59 identified companies that process ground cocoa into chocolate, among which Cadbury (as of February 2010 part of Mondelez International), Barry Callebaut, Hershey, Lindt, Mars, and Nestle are the largest. Thus cocoa beans go from farmers to small traders to wholesalers to exporters, or from farmers' cooperatives to the exporters, and thence to the grinders. The processed chocolate then goes to food manufacturers, including some who make ready-to-eat chocolate items, and most of the processors also produce chocolate items for retail trade. While

the cocoa/chocolate value system is dominated by a few large firms that both process cocoa beans and manufacture ready-to-eat items, there does not appear to be any cartel controlling production and trade. None of the major companies appears to have vertically integrated either upstream into farm production or downstream into retail sales.

The Social Relationships Linking Production and Consumption

> *It's everybody's non-pollutionary, anti-institutionary, pro-confectionery factory of fun!*
> Willy Wonka and the Chocolate Factory

For almost all of its existence, chocolate has been implicated in imperial relations, beginning with Mesoamerican empires and then subsequently with European empires and neo-imperialist structures. As noted in the previous section, the tree was first domesticated in northeastern Peru and then spread northward into Central America. The earliest remnants of human consumption date from about 3,500 years before the present time and were found in sites in what is now Honduras associated with Paleo-Indian cultures during the Archaic, pre-Olmec period. These remnants indicate that the technique of toasting and grinding the seeds and mixing the powder with the pulp and hot water and whipping the liquid into a frothy drink had been developed. This and subsequent archeological findings suggest that chocolate was always consumed as a beverage.

After the Olmec culture, the Mayans used chocolate for ceremonial purposes; there is some evidence that its consumption may have been restricted to the religious and political upper class. Finally, for the Aztecs, chocolate was associated with Xochiquetzal, the goddess of fertility. (Ixcacao was the original Mayan goddess of fertility, but was supplanted by Ix Chel; the Aztecs keep the connection between fertility and chocolate, but change the name of the goddess to Xochiquetzal.) Cacao was produced in various parts of the empire and transported to the imperial centers; in some cases the tribute required from other areas of the empire was paid in cacao. Chocolate was viewed as a luxury good throughout the empire.

The first record of the dry mixture of ground cacao seeds and cacao pulp being shipped to Europe is from 1585, over 60 years after Cortes arrived in Mexico. Initially units of the Spanish army enslaved native Mesoamericans to produce cacao for export; it was marketed as an expensive luxury good. Subsequently Spanish landholders began importing slaves from Africa to grow cacao on plantations. After the countries of Latin America won their independence from Spain and Portugal in the early 1800s, the *forastero* variety of *Theobroma cacao* was taken from the area of its origin in western Amazonia to West Africa, where Ghana and Cote d'Ivoire are currently two of the three main producing countries in the world (Ryan 2011). While today this translocation of a valuable species might be regarded as a violation of biosecurity and food sovereignty, it was a common practice among the imperial powers in the 1800s and 1900s (Hecht and Cockburn 1991).

The popularity and price of chocolate led firms to develop new techniques for processing the cacao. In the 1700s it was discovered that the cocoa butter could be squeezed out of the cacao, leaving a hard durable chocolate, and in the 1800s solid chocolate was being produced in many European countries. In 1879 Rodolphe Lindt invented the conching process in which the chocolate paste is repeatedly spread over a surface and then scraped back off the surface continually for many hours to produce a softer chocolate with a less acidic, mild, rich taste.

During the 1800s and 1900s, the chocolate industry proceeded upon somewhat parallel tracks in Europe and North America, with ethical issues perceived to some extent on both sides of the Atlantic. In 1879 the Cadbury Brothers established the town of Bourneville and located their manufacturing operations there. As noted in the previous section, the development of milk chocolate by Milton Hershey at the end of the nineteenth century led the company to shift its emphasis from goods for industrial food production to consumer goods. Although writers at the time saw ethical issues with company towns

(the compound exploitation of the workers through low wages, poor working conditions, environmental pollution, high rents, and high prices at the company store and the pervasive discipline of the workers through a company police force and a company supported faith-based organization; cf. Porteous 1970), Hershey decided to build a new town in rural southeastern Pennsylvania proximate to the Chesapeake and Delaware Bays where the imported cacao beans and sugar would arrive (Craft 2009). Before World War I Hershey relied on beet sugar from Europe, but the disruption caused by the war led the firm to build a sugar plantation and production facilities in Cuba (http://www.thehersheycompany.com/about-hershey/our-story/hersheys-history.aspx). Again although many writers today would emphasize the ethical issues of land control and food sovereignty inherent in such a venture, it was a common practice by industrial firms at the time (Hecht and Cockburn 1991).

Finally, this section considers the ethical aspects of the organization of the chocolate industry. One of the ways in which developing countries with high reliance on exported commodities try to secure a fair price for their commodities is by gaining countervailing power in the international market against the large-scale buyers of the commodity through forming marketing boards at the national level and a cartel among the marketing nations. Most of the marketing countries established marketing boards after independence in the 1950s and 1960s, and like many commodities, an effort was made to form a cartel of cacao-exporting countries. Although negotiations began in 1963, it was not until 1972 that an agreement was reached under the auspices of the United Nations Conference on Trade and Development (UNCTAD) establishing a system of buffer stocks and export quotas (LeClair 2000, p. 64). Neither this agreement nor three subsequent agreements were successful in stabilizing the market price at the level desired by the exporting countries. The nation with the largest production, Cote d'Ivoire, refused to participate, and new producers such as Malaysia entered the market in the 1980s. The marketing boards themselves were victims of the World Bank and International Monetary Fund policies of structural adjustment in the 1980s and 1990s. As a result of the failure of the cartel and the forced abolition of the marketing boards, the real price of cacao beans at New York fell from $1,613.70 per metric tonne in 1974 to $589.75 in 1996.

While the cocoa-exporting countries have not been successful in using their market concentration to obtain better prices from processors, the processors have perhaps been more successful in using their market power to obtain higher prices from consumers. The chocolate industry is highly diffuse globally; most of the large firms are active in many countries. Worldwide, the five largest firms in the industry (Ferrero, Hershey, Mars, Mondelez (Mondelez International is the name of the US-based multinational corporation comprising what were formerly the chocolate and confectionery holdings of the Kraft Corporation, including Cadbury and Toblerone.), Nestle) control slightly more than half of the market (IBISWorld 2013). As a result, despite the distressed global economy and rising sugar and cocoa prices, profit as a share of total revenue is expected to rise to 8.6 % for the industry as a whole. Much of the recent increase in concentration has come through mergers and acquisitions (e.g., Hershey bought Reese, Mars bought Wrigley) that have impacts on employment and community well-being that raise ethical issues. One way in which firms in Europe and the USA have been able to use their political power is to obtain favorable government policies on sugar production and importation (USDA ERS 2012).

The Social Relations of Production and Manufacturing

The previous two sections have noted that during much of its history, various aspects of the cacao production system have been ethically problematic. However, during the past three decades, much of the ethical focus has been on the social and economic relations of production and manufacturing and of marketing and exchange.

With the exception of Brazil and Ecuador, cacao is grown on the farms of smallholders having generally between 1 and 3 acres (Franzen and Mulder 2007); in Brazil the average cocoa farm is 20 ha. Despite the relatively small scale of African and Asian cocoa farms and despite the fact that cacao pods are harvested year-round, a large amount of labor is required for the harvesting and on-farm processing (dehusking and fermentation). For example, the average farm in Cote d'Ivoire produces approximately 4 kg of intermediate product per day (ICCO n.d.) As noted in the previous section, cocoa farmers have had to deal with gradually falling prices for their crop, and because labor is their main cost, they have had to reduce the cost of labor as much as possible. To do this they have chosen to rely on child labor and to maintain those children and other laborers in conditions that have been labeled as slavery. While the ethical issues with slavery may be clear to all, the International Labor Organization (2004) indicates that the forms of child labor that raise the most ethical issues include cases where children working in cocoa are not enrolled in school, where work makes them leave school prematurely, or where they have to combine school attendance with long hours and/or heavy work that interferes with their learning.

Berlan (2013) argues that labor in cocoa production needs to be analyzed using a broad understanding of the degrees and forms of labor coercion rather than a simple dichotomization of free and unfree labor. Her analysis of her fieldwork in Ghana shows that the range of choices children have is significantly constrained by their family situation, so that while they may not be working against their will, their ability to exercise agency was very limited. She also argues that it is important to distinguish between local labor and trafficked labor and to be very careful about the accuracy of information about the latter. While both child trafficking and children working in hazardous activities are illegal, Berlan focuses on the latter, noting that the involvement of children in hazardous activities probably applies equally to local child workers and trafficked child workers. Berlan notes the difficulty of distinguishing between (acceptable) child work and (unacceptable) child labor. While the concepts of apprenticeship to learn a trade, and unpaid family labor, may be widely used, they do not clearly distinguish between child work and child labor.

Concerns about de facto slavery in cocoa production were not a new thing in the late twentieth century; in the middle and later 1800s articles in The New York Times expressed concern about the use of slaves in cocoa production in the Caribbean and Latin America. In the early 1900s, Cadbury shifted its sourcing from the Portuguese western African islands to what was then the Gold Coast Colony because of allegations that Portuguese growers in the islands were using slaves from the Portuguese colony of Angola on their cocoa plantations (Satre 2005). Shortly thereafter the topic pretty much disappears from the pages of The New York Times until the 1980s, where it continues sporadically up to the present time. A series of articles in the *Milwaukee Journal* (Raghavan and Chatterjee 2001) and a BBC broadcast also in 2001 increased attention to slavery in cocoa production (Wikipedia 2013). While Off (2006) documents the conditions of "enslavement" under which Malian boys work on cocoa farms in Cote d'Ivoire, Berlan (2013) did not find slave labor in the community she studied in Ghana. As noted above, Berlan (2013) argues that while de jure slave labor may be readily identifiable, de facto slave labor is much less clear and more nuanced.

The social and economic relations of production occur both in the cocoa fields and in the chocolate factories. Both in Western Europe and in the USA, labor in chocolate factories participated in the unionization movements of the late 1800s and early 1900s. Although an effort by the Congress of Industrial Organizations to organize the Hershey Chocolate Corporation workers against the paternalism of the company town ended in failure after the company broke a sit-down strike in 1937, the Bakery and Confectionery Workers' International Union of America, affiliated with the American Federation of Labor, was more successful in 1939.

Labor maintained an improving socioeconomic status until the rise of neoliberalism in the 1980s. During the past 30 years, mergers and acquisitions have resulted in decreasing employment in production facilities in North America and Europe. At the same time increasing globalization of marketing has led firms to open new plants in Latin America, Africa, and Asia. In 2002 some of the trustees of the Hershey Trust that owned the Hershey Chocolate Corporation voted to sell the corporation to the Wrigley Corporation; however the proposal provoked tremendous community and regional opposition, and the Pennsylvania attorney general was able to remove the trustees from office, so the sale did not take place. Most recently, the Hershey Corporation faced strong criticism for bringing foreign students to work on educational internships in its factories but then paying them very little to do line jobs that entailed no training or education.

The Ecological Relations of Production

The cocoa value chain involves not only social relations of production with other social actors but also ecological relations of production with elements and aspects of the biophysical environment. Although Morbey (1995) argues that cocoa is a crop that has the potential to protect the environment, most of the literature emphasizes the ways in which cocoa production extracts value from the biophysical environment in unsustainable, unregenerative ways and in doing so degrades the ecological functioning of the agroecosystem. Ekanade (1991,1992) describes the ways in which and the extent to which cocoa production in Nigeria degrades the fertility and health of the soil and the health of the forest land cover. Not only have the biotic and edaphic components of the agroecosystem in the Nigerian Cocoa Belt been almost totally degraded, but in many areas of the belt, cocoa production is being abandoned.

In a life cycle assessment of cocoa grown in Ghana, Afrane and Ntiamoah (2011) found that freshwater aquatic ecotoxicity was the most significant negative impact on the biophysical environment from pesticide use and that "the production and use of fertilizers and pesticides account for almost all the environmental burdens in the cocoa production stage." Cocoa farming also contributes to rainforest and old growth forest deforestation (England 1993). By clearing land into these forests, farmers decrease the biodiversity and interactions between the organisms that naturally live in this area (Bentley et al. 2004). Many wildlife habitats are destroyed and the plant species diversity is drastically reduced (cited in http://en.wikipedia.org/wiki/Environmental_effects_of_cocoa_production). The extent of deforestation has increased as the production of cocoa has shifted from shade-grown to sun-grown techniques; sun-grown techniques are more productive per hectare, but produce a lower-quality cocoa. And as chocolate manufacturers have substituted palm kernel oil for cocoa butter, the deforestation caused by environmentally damaging palm oil production has been an issue (http://www.foodnavigator.com/Product-Categories/Chocolate-and-confectionery-ingredients/ADM-Cocoa-UK-commits-to-100-segregated-certified-palm-oil-in-Europe).

Ecological relations of production occur both with respect to productive activities on the farm and with respect to processing and manufacturing activities in factories. The literature did not identify any environmental issues with processing and manufacturing activities, perhaps because these take place largely in Europe and North America where environmental impacts from manufacturing are legally regulated.

The Social and Economic Relations of Exchange

Another one of the loci in the chocolate value system where ethical issues occur is in the linkages between sellers (suppliers) and buyers (intermediate and/or final consumers). These linkages occur between farm producers and middlepersons, between middlepersons and exporters, between exporters and processors, between processors and manufacturers, between

manufacturers and wholesale and retail distributors, and between retailers and final consumers.

Perhaps the greatest amount to attention concerning the ethics of chocolate has been paid to the equity of the exchange between farmers and first buyers. During the 1980s, alternative trading organizations gradually shifted the composition of their merchandise from handicrafts to agricultural goods – initially coffee and tea and subsequently cocoa and other foodstuffs (Wikipedia 2013). But to expand the market beyond the ATO's own outlets, some way of communicating to the buyer the alternativeness of the merchandise was needed; to meet this need, fair trade labels were developed (Renard 2003). During the 1990s fair trade labeling organizations proliferated in Europe and North America, but in 2002 the Fairtrade Labeling Organization International (FLO) attempted to unify the multiple organizations under one process and one label. Although effective for about 10 years, within the past couple years, divisive conflict has occurred within the FLO.

In general, fair trade arrangements are negotiated directly with a growers' cooperative, guarantee a minimum price that will cover production costs, and include both a long-term contract and community investment, all in order to avert environmentally degrading production practices, unremunerative economic transactions, and unethical labor practices (Khamis 2012). One exemplar, Divine Chocolate Ltd. was formed in 1997 as a joint venture between a Ghanaian cocoa growers' cooperative, a fair trade supply chain management company, and a cosmetics retailer (Davies 2010); not only the cocoa but also the sugar in their chocolate is fair trade, and the company manufacturing their chocolate is fair trade compliant. As another example, after the addition of an emphasis on fair trade to its original organic identity, sales of Green and Black's chocolate in the UK grew significantly. But, as Khamis (2012) points out, the increase in sales has been accompanied by a de-emphasis of the ecologically and socioeconomically ethical aspects of the chocolate, and the manufacturer has not made any effort to make ethical consumption more available to lower-income consumers; while the chocolate value chain has been made equitable for some farmers, the value chain itself has not been transformed to rectify basic structural inequities.

While there were concerns that Green and Black's ethical approach might be diluted when the firm was acquired by Cadbury, in fact 4 years later Cadbury committed its main product line to fair trade, in effect tripling fair trade chocolate sales in the UK (Boyle 2009). This commitment appears to have endured through the acquisition of Cadbury by Kraft late in 2009 and the spin-off of Kraft's confectionery lines into Mondelez in 2012. Holmyard (2007) noted that many retailers were adding fair trade items to their own brand lines but also questioned the extent to which these additions were impacting the ethical issues to which fair trade is directed. In fact, many of the own-brand fair trade items were being supplied by the Divine Chocolate Company (formerly the Day Chocolate Company), but this led critics to question the ethical value of selling a fair trade item in a store that was not itself committed to the social, economic, and environmental principles of fair trade (Davies 2010). These questions were intensified when the Divine management proposed selling their products at Royal Dutch Shell stations and McDonald's outlets.

As noted above, the cocoa-exporting countries were never successful in forming a cartel to provide power in the international market for raw cocoa to countervail the oligopsonistic power (the ability to set prices significantly lower than those that would occur in a truly competitive market) of the cocoa processors. Although cocoa producers enjoyed a brief rise in prices in the mid-1970s, by 1982 prices had returned to their historical lows where they remained until 2008, illustrating the market power of the processors (http://www.tradingeconomics.com/commodity/cocoa). In addition, Khamis (2012) suggests that speculative buying on the cocoa futures markets leads to wide fluctuations in prices that destabilize the marketing arrangements of the producing countries. At the downstream end of the value chain, the large manufacturers were accused of using their

oligopolistic power to fix retail prices for their products in Canada in 2007 (Johnston 2013).

Finally, the social and economic relations of exchange concern the marketing of chocolate to final consumers. This will be discussed in greater detail in the next section, but here one particular ethical issue merits mention – the marketing of chocolate to children. Based on the premise that chocolate is an unhealthy product, Davies (2010) questions the ethical appropriateness of advertising chocolate directly to children, even if, as was the case with Divine products, the chocolate was ethically produced and was accompanied by educational material concerning the means and relations of production. In 2007, Mars was the first food company to voluntarily cease advertising to children younger than 12 years of age (http://www.mars.com/global/about-mars/history.aspx).

Modes of Consumption

> *What you see before you, my friend, is the result of a lifetime of chocolate.*
> Katharine Hepburn

In contrast to modes of production, which have ethical implications because of their impacts on the well-being of workers and the biophysical environment, modes of consumption refer to the ways in which the organization and performance of consumption have ethical implications because of their impacts on the well-being of all consumers and the biophysical environment. At the heart of the analysis of modes of consumption of chocolate is the question: what is the social meaning of chocolate? In brief, over its history chocolate has gone from being an elite luxury item to a treat affordable by middle class consumers, to an item of mass consumption, and finally back to an element of foodie aesthetics. Whereas 100 years ago Hershey was Fordist chocolate, a couple decades later Mars was Sloanist chocolate, and now Ghirardelli and Godiva are foodie chocolate (Medeiros 2000).

During its recent history, much of the contestation concerning chocolate has focused on its health impacts. Articles in *The New York Times* 100 years ago claimed that eating chocolate was harmful to human health and chocolate was banned from US Army rations during World War I (*New York Times*, 15 December 1913, 29 December 1914). Over the years, chocolate has been implicated in acne, obesity, and diabetes. Perhaps to counter the negative discourse, in 1923 Mars introduced the Milky Way; the "milk" in the Milky Way was malted milk, then perhaps more than now seen as a healthful ingredient. More recently, scientific studies have supported the beneficial impacts of chocolate consumption on cognitive function, hypertension, and insulin resistance (Desideri et al. 2012). The debate about the positive and negative human health impacts of chocolate has been the focus of two recent major edited volumes (Paoletti et al. 2012; Watson et al. 2013); together the two books comprise 52 chapters that cover the relationships of chocolate to almost every aspect of human physical and mental health and well-being. Just to illustrate the tremendous richness and diversity of the debates, one chapter questions the relationship between chocolate and acne, and another argues that consumption of chocolate helps prevent diabetes. As further evidence of the complexity, the Hershey Company is currently facing a class action lawsuit for making an antioxidant health claim that was not approved by the US Food and Drug Administration (http://www.confectionerynews.com/Manufacturers/District-court-will-not-dismiss-Hershey-antioxidant-labeling-suit).

To a significant extent, the shift in the medical perspective on chocolate has been linked to a shift in the formulation of chocolate items. Concerns about the impacts of chocolate on acne, obesity, and diabetes were based on formulations of chocolate that included significant amounts of sugar and milk to balance the bitterness and acidity of the cocoa. The current emphasis on the health benefits of chocolate consumption is based on formulations of "dark chocolate" that are as much as 87 % cocoa and thus have a higher prevalence of the beneficial flavanols (Gray 2012). At the same time, the increasing popularity of very dark chocolate has been linked to the upscaling of chocolate consumption. Although Hershey had marketed

a "Not So Sweet" bar in 1934, it was not popular and was discontinued in 1937 (http://www.thehersheycompany.com/about-hershey/our-story/hersheys-history.aspx). But by the 1980s, dark chocolate (70 % and above) was portrayed in the pages of The New York Times as desired by more sophisticated, gourmet tastes. As Woerle (2012) notes, the desire to be consuming the elite quality chocolate becomes entwined with the wish to be consuming ethically produced chocolate.

Ultimately chocolate is, at least in part, what consumers want it to be. In the previous sections, the ethical dilemmas with chocolate being a sweet for children were noted. Chocolate has always been seen as an energy food; in the 1900s Hershey marketed chocolate tablets for energy, and more recently Mars introduced a chocolate energy bar. Currently however chocolate has yielded the energy mantle to specialized energy drinks, and it is those products that are dealing with the ethical issues associated with rapid, powerful, and enduring elevated human energy levels. Throughout its history there have been claims that chocolate has aphrodisiac effects (Afoakwa 2008), and Davies (2010) criticizes Divine Chocolate for participating in sexually themed Valentine's Day competitions. One website urges men to think of chocolate as a sweet treat, an arousing flavor, and an alluring scent for seducing women (http://www.askmen.com/scent/scent_300/332b_seduce-her-with-chocolate.html). And finally, in contrast to the view of chocolate as a gourmet delicacy, chocolate is increasingly portrayed as convenient. Although pieces of chocolate covered with a hard shell had been developed in Europe and were issued to soldiers in the Spanish Civil War, their popularity was greatly increased when Mars began using the slogan "melts in your mouth, not in your hand" for its M&M products in 1954 (http://en.wikipedia.org/wiki/M%26M%27s). Both Mondelez (formerly Cadbury/Kraft) and Nestle have recently developed a "non-melting chocolate" to increase their sales in markets with hot climates (http://www.foodnavigator.com/Product-Categories/Chocolate-and-confectionery-ingredients/Nestle-s-answer-to-non-melting-chocolate).

Appropriation and Substitution

> *Life is like a box of chocolates. You never know what you're gonna get.*
> Mrs. Gump

In 1987 Goodman et al. proposed that industrial capitalism tends to restructure the agrifood system by appropriating non-capitalist production, by bringing processing and marketing functions into the ambit of the capitalist agrifood system, and then by substituting industrialized synthetic forms of those materials and processes for the traditional authentic originals. Hopefully the second section of this entry provided at least a rough sense of the ways in which artisanal chocolate was appropriated from artisanal producers first by the native Latin American empires and subsequently by the European colonial empire and then in the late 1800s appropriated from European and North American craftspeople by the emerging industrial confectionary firms. In this section then we turn briefly to a discussion of the ethical issues entailed in the tendency of industrial capitalism toward substitution.

Many nations have established standards of identity for cacao, chocolate liquor, and different intermediate and final chocolate products. In the USA, the Food and Drug Administration sets standards for the purity of cacao nibs, the percentage of cacao fat and dairy fat in chocolate liquor, and, for example, the percentages of chocolate liquor and milk solids and carbohydrate sweeteners in milk chocolate (http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=163.130). Within the boundaries set by these standards, chocolate companies attempt to identify ways to produce products that will be acceptable to their customers at the lowest possible monetary cost, subject to other constraints, e.g., health. For example, "the historical uncertainty in the cocoa butter supply and the volatility in cocoa butter prices forced confectioners to seek other alternatives" such as palm kernel oil (Wang et al. 2010, p. 1137). And even though both the USA and the EU have policies on sugar that benefit confectionary companies,

chocolate companies are substituting high-fructose corn syrup for sugar.

The question is whether these substitutions implicate an ethical issue. The companies conduct very sophisticated sensorial testing to determine whether a significant percentage of users will notice any organoleptic difference caused by the substitution. And the substituted ingredients are clearly listed on the label. So the substitution would seem to pass the ethical tests of transparency, aesthetics, and harmlessness, albeit not prior informed consent. Indeed the companies justify some of the reductions in fat content as efforts to reduce the calories in chocolate to improve its healthfulness. Perhaps the lingering ethical issue is the distribution of the net income attributable to the substitution between the company and the buyer.

When less expensive ingredients are substituted and the substitution is not included on the label, it is considered to be counterfeiting and fraud and thus a violation of generally accepting ethical norms (http://www.nytimes.com/2013/06/27/business/food-fraud-more-widespread-than-suspected.html?pagewanted=2&_r=0). Less clear-cut may be the issue of artificial chocolate flavoring. Research and development in food chemistry has now produced an artificial chocolate flavor that is not readily distinguishable from cocoa or natural chocolate flavor in many uses. Currently US FDA regulations permit the product made with this artificial flavoring to be labeled "chocolate artificially flavored" and require that the list of ingredients include "artificial flavors" (http://www.fda.gov/ICECI/ComplianceManuals/CompliancePolicyGuidanceManual/ucm074446.htm). Also less clear-cut is the increased use in chocolate of what in the past were waste products from the chocolate production process. For example, Barry Callebaut has developed a process to grind cocoa shells into a powder fit for use as a cocoa replacer, fat bloom inhibitor, and ingredient in other foods (http://www.confectionerynews.com/Ingredients/Cocoa-shell-powder-has-numerous-uses-in-chocolate-and-foods-says-Barry-Callebaut). While the repurposing of what had been waste into a food ingredient may be an ecological improvement, it raises the question of the extent to which consumers should be publicly consulted about changes in the composition of a traditional and iconic food like chocolate.

Ethical Activism Along the Value Chain

Nobody knows the truffles I've seen.
George Lang

While preceding sections have considered the various ethical dimensions of chocolate, in this section the focus is on applied ethics – the various forms of social activism that have sought to give prominence to those ethical issues. As noted above, the development of fair trade marketing arrangements for cocoa began in the early 1990s, at least in part in response to falling cocoa prices on the world market and to a perception that earlier development efforts had led smallholders to become dependent on the production of one or more commodities for export. The fair trade movement sought both to develop suppliers whose relations of production and exchange could be accurately characterized as "fair" and to develop marketing arrangements where the "fairness" identity could be maintained and thus a price premium could be realized. In the late 1990s, various human rights, children's rights, and labor rights groups in the USA began publicizing and campaigning against slavery and child labor in cocoa production along with other economic activities. Various international environmental groups (e.g., Rainforest Alliance) have publicized the ecological issues associated with full sun cocoa and unsustainable palm oil.

Although it is generally agreed that these activist efforts have had impacts, there is less agreement on the substance and extent of those impacts. As noted above, Berlan (2013) argues that in many cases the local understanding of children's involvement in cocoa production is very different from northern and western understandings of "slavery" and "child labor." She (Berlan 2008) also suggests that only a small

percentage of the cocoa that is certified for fair trade is actually traded through fair trade channels. Nevertheless the activism has certainly stimulated a response, in at least some cases a significant response, from the corporations involved with chocolate. In 2012 Hershey announced that by 2020 it would use only fair trade certified cocoa and that it would accelerate its efforts to eliminate child labor in its supply chain (https://en.wikipedia.org/wiki/The_Hershey_Company). ADM Cocoa UK has committed to 100 % certified palm oil for its European operations, and Mars had committed to 100 % sustainable supply of cocoa by 2020 and zero environmental impact by 2040 (http://www.foodnavigator.com/Product-Categories/Chocolate-and-confectionery-ingredients/ADM-Cocoa-UK-commits-to-100-segregated-certified-palm-oil-in-Europe; http://www.mars.com/global/about-mars/history.aspx). To avoid mandatory federal certification and labeling of chocolate as "slavery-free," in 2001 the corporations engaged in the importation and production of chocolate committed to a voluntary protocol to end child labor by 2005; 10 years later the terms of the protocol had still not been fulfilled (http://topdocumentaryfilms.com/dark-side-chocolate/).

In some ways ethical activism concerning chocolate has been made easier by the fact that two occasions of peak chocolate consumption are Valentine's Day and Halloween; it is easy to argue that candy given to children on Halloween should not have been made with child labor and the candy given to one's romantic partner should not have been bought for an unfair price. But those morally principled stances themselves entail ethical issues. Berlan (2013) questions the appropriateness of using commercial transactions to impose northern and western understandings of children's rights on other cultures and suggests that many of the corporations involved with the production and manufacturing of chocolate have done more than fair trade arrangements to improve the well-being of cocoa-producing communities. Indeed, for several years, the International Cocoa Organization has been urging its members to pay more attention to raising the income levels of poor cocoa farmers. In contrast to concerns about the inappropriate imposition of western standards, in 2007 "the Roundtable for a Sustainable Cocoa Economy (RSCE) met for the first time to start a dialogue of sustainability across the gamut of cocoa production – farmers, co-operatives, traders, exporters, processors, chocolate manufacturers, wholesalers, government representatives, NGOs, financial institutions and donor agencies." (Khamis 2011).

Conclusion

> *La impericia al batirlo puede ocasionar de un chocolate de excelente calidad se convierta en detestable. . .*
> Como Agua Para Chocolate

This article has identified (1) some of the ethical issues entailed in the production and marketing of chocolate, (2) the various efforts to address those issues, and (3) ethical concerns about those activist efforts. Certainly some ethical issues that could have been covered have not. Perhaps most notable among these are the issues concerning gender and chocolate; in apology for their omission, I can only say that they are covered by Austin (2005) and Robertson (2009). With that apology, in conclusion I will briefly highlight four emerging issues concerning chocolate.

First, like all contemporary crops and agriculture, cocoa production will be significantly affected by anthropogenic climate change. Currently *Theobroma* species grow largely in the tropics spanning 20° on either side of the equator. The extent to which *Theobroma* will be able to thrive farther away from the equator will depend on the ways in which both temperature and precipitation regimes change in the subtropical regions (http://thechronicle.com.gh/ghana%E2%80%99s-cocoa-production-to-decline-in-20-years/).

Second, while cocoa production has been the proximate cause of significant environmental change, in the years ahead, it itself will be significantly affected by various forms of global environmental change. Already deforestation in Cote d'Ivoire is threatening both the human rights and the land rights of cocoa producers (http://planetark.org/wen/69108).

Third, the trade-off between shifting production to developing countries and decreasing employment in the North presents an ethical dilemma. On the one hand, developing countries rightfully expect to develop economically by doing themselves more of the processing of the raw commodities they produce. On the other hand, the well-being of whole communities in the North such as Hershey, Pennsylvania, depends on employment in chocolate processing and manufacturing. For example, Barry Callebaut has opened its second factory in Mexico, costing $48 million, to supply chocolate to Grupo Bimbo, the domestic market, and Central America (http://www.foodnavigator-usa.com/Suppliers2/Barry-Callebaut-opens-48m-factory-in-Mexico).

The final emerging ethical dimension of chocolate concerns local and artisanal production both in the North and in the South. While Hershey, Mondelez, and Mars dominate the chocolate candy shelves of the supermarkets, there are 15 small-scale chocolate makers in the USA, and all large- and medium-sized cities have at least one or two small-scale shops where intermediate chocolate is reformulated to a desired level of sweetness or bitterness and then made into various sorts of candy specialties. These artisans are using their craft and their creativity to produce chocolate items that participate in the ethic of local and regional alternative food systems.

How these artisanal producers will fare in the years ahead and how small-scale cacao growers in Africa will fare in the years ahead remain to be seen. Hopefully this entry has given the reader some reason to believe that as their fates unwind, at least some of the consumers and manufacturers and dealers in the chocolate value chain will be thinking about the ethical dimensions of their relationships with chocolate.

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Christian Ethics and Vegetarianism

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Synonyms

Bible; Christianity; Jesus; Meat; Religion; Veganism; Vegetarianism

Introduction

The relationship between Christianity and vegetarianism is complex and long-standing. On the one hand, vegetarianism has never been a significant part of Christian theology or practice, especially in the West, and most Christians today think of their dietary choices as nonethical decisions that are largely irrelevant to their faith. To the extent they address the issue at all, Christians typically defend meat consumption by noting that God gave humans "dominion" over the rest of creation (Gen 1:28), that he created humans but not animals in "his image" (Gen 1:27), and that humans have souls while animals do not. In other words, man is understood to be morally superior to the rest of creation in a way that gives him permission to eat nonhuman animals more or less as he chooses. Historically, this point of view has been supported by most Christian theologians and ethicists, including leading thinkers such as Augustine and Thomas Aquinas. For Augustine, eating animals is not sinful because God put them on earth for human use. "To refrain from the killing of animals," he writes, "is the height of superstition" (Augustine 1966, p. 120). Influenced by both Augustine and Aristotle, Aquinas agrees that there is nothing wrong with eating animals, since they are man's natural inferiors, owing to their lack of reason. The "order of nature," he writes in several places, condones human consumption of animal flesh.

On the other hand, there is both biblical support and historical precedent for advocating vegetarianism on the basis of Christian ethics. While many passages in the Bible support meat eating, it also usually represents the use of animals for food as in some way problematic. Other passages are more favorable to vegetarian arguments. Some of Jesus' first followers eschewed meat, and many later Christian groups such as the Carthusians, Benedictines, and various monastic communities had or continue to have vegetarian commitments. For most of Christian history, abstaining from meat has been an integral part of Lent and other ritual practices. Prominent Christians such as Turtullian, Origen, Marcian, St. Benedict, John Wesley, Albert Schweitzer, Leo Tolstoy, and Karl Barth defended vegetarianism. Several recent Christian authors make the same case. Typically, Christian vegetarians do not deny that eating meat in some circumstances is ethically justifiable, but they portray vegetarianism as an obligation for those who have good alternatives to meat readily available to them.

While Christian arguments for vegetarianism often parallel secular ones, two commonalities are distinctive of Christian approaches. Methodologically, claims made within Christian ethics are biblically based in some way, either by relying on Old or New Testament passages directly or by drawing out the implications of scripturally grounded general ethical principles. Substantively, Christian perspectives are united by the claim that only a vegetarian lifestyle shows proper reverence and appreciation for the goodness of God and his creation. This point can be developed in different ways, and since different strands of Biblical evidence can be adduced in support of it, Christian ethics gives rise to a variety of arguments for vegetarianism.

Protological and Eschatological Arguments

One of the most common themes among Christian vegetarians is the protological assertion that vegetarianism represents God's original intent for his creation. God grants man "dominion" over the earth after proclaiming every creature in it to be good. Then he says, "See, I have given you every plant yielding seed that is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food" (Gen 1:29). After extending this command to nonhuman animals as well, God pronounces his vegetarian creation "very good" (Gen 1:31). Perhaps more than any other passages, these verses are used to claim a Biblical basis for vegetarianism. Christian vegetarians emphasize that man's "dominion" is not a license to tyrannize, and it does not justify unrestricted meat eating in the way commonly supposed. Rather, these passages show that humans are to be creation's stewards, with

caretaker responsibilities towards what ultimately belongs to God.

The message of the Edenic picture soon becomes more ambivalent, however. After the Fall and the Flood, God explicitly permits meat eating as an apparent concession to human sinfulness. "Every moving thing that lives shall be food for you; and just as I gave you the green plants, I give you everything" (Gen 9:3). God adds the caveat that humans "shall not eat flesh with its life, that is its blood" (Gen 9:4), a point reaffirmed in Lev 3:17, 17:14, Deut 12:23, and later by the Jerusalem Council (Acts 15:19–20). God also directs humans to kill animals and eat them. At the first Passover in Egypt, the Israelites are told to slaughter and eat lambs, an event Jews commemorate annually in the traditional Passover feast. God allows the eating of other animals at Lev 11, and he directs their sacrifice in Lev 16:3–19 and in other places as atonement for human sin.

While these points complicate the protological argument for vegetarianism, arguably they do not vitiate it entirely. God's permission to eat meat as a response to human weakness does not necessarily retract vegetarianism as a moral ideal. Moreover, at no time does God indicate that animals exist merely to gratify human desires. In its own way, the Noachide covenant that blood, the life force, must be drained from an animal's carcass before it is consumed reaffirms the value and sacredness of life. Compared to pagan religions in the ancient world, the Jewish worldview displays an unusual degree of respect for animals. Lastly, although animal sacrifice was part of Jewish religious practices, Christians generally believe that the need for it was forever put to an end by Christ's sacrifice on the cross. The author of the Letter to the Hebrews represents Jesus as saying that he has abolished sacrificial animal offerings to do God's will (Heb 10:1–14).

Eschatological or future-oriented arguments for vegetarianism also find support in the Old Testament. Isaiah includes the well-known prophecy that "the wolf shall live with the lamb," "the leopard shall lie down with the kid, and "the lion shall eat straw like the ox" (Isa 11:6–7). This vision of the "peaceable kingdom," as it is often called, refers to God's promise of a "new heavens and a new earth" free of pain, destruction, and violence (Isa 65:17). Along these lines, contemporary Christian vegetarians often argue that ending violence towards animals is necessary to bring about the Kingdom of God promised in the New Testament. While this Kingdom is sometimes interpreted as a state of affairs that will come about by divine intervention alone, most contemporary scholars understand it as an already-initiated process in which humans are full and active participants (Webb 2001). The claim is thus that man's obligation to live in anticipation of the Kingdom requires foregoing meat so far as possible.

Asceticism

Many contemporary secular vegetarians are motivated primarily by a concern for personal health, and some Christian vegetarians have a similar focus. The thought is that since humans' bodies are gifts from God, they are obligated to take care of their health. Given the deleterious physical effects of meat eating, at least when consumed in large quantities, vegetarianism is seen as an acknowledgment that bodies are "temples of the Holy Spirit within us" (1 Cor 6:19). Biblical precedent for a health-based case for vegetarianism also appears in the Book of Daniel. Daniel and three others refuse King Nebuchadnezzar's rations of food and wine – consuming only "vegetables to eat and water to drink" – and emerge appearing "better and fatter" than those who had been eating the royal fare (Dan 1:8–16). Daniel's intent, however, was to avoid ritual defilement, and so like health considerations in general, this story supports restricted meat consumption more than unconditional vegetarianism.

Historically, a more common point is the conviction that meat eating leads to vice. Gluttony is of course one of Christianity's so-called seven deadly sins, and gluttony and meat eating have often been linked. Ironically, the association between the two may lie behind the Gospels' description of Jesus as a "glutton and a drunkard" (Mt 11:19; Lk 7:34). The comment may be

intended to draw a polemical contrast between Jesus and John the Baptist, who practiced a more ascetic lifestyle, or it might merely reflect Jesus' willingness to share meals with the righteous and sinners alike. In any event, Christians have often thought that consuming flesh would fuel various sinful habits and desires, including alcoholism, sexual urges, anger, aggression, and other base instincts. This is partly why Rev. William Cowherd, who in 1809 founded the English Bible Christian church, required church members to sign a pledge foreswearing both meat and alcohol.

The earliest Christian vegetarians, however, practiced vegetarianism for reasons that were more directly spiritual. Their asceticism resulted from the belief that meat eating is a luxurious indulgence that interferes with spiritual communion with God. The self-denial involved in eating only simple plant foods helps orient one's thoughts away from materialistic, earthly concerns and helps focus attention on the divine. Such was the main rationale of the early Desert Fathers and the monastic vegetarians commonly found in eastern Christianity (Grumett and Muers 2010).

Vegetarianism as a spiritual discipline is quite different than the religious interests that motivate Paul's discussions of meat eating in the New Testament. Paul's overriding interest is to preserve harmony in early church communities and to win new converts; there is no indication that he thought meat eating in and of itself is spiritually significant. What matters for Paul are the social circumstances and spiritual attitudes surrounding flesh consumption. He cautions against eating meat offered to idols that could become a "stumbling block" to those who are "weak" (1 Cor 8:9; Rom 14:21). The point is not to denigrate vegetarians but to protect those who are weak in their faith from sliding back into paganism. "If food is a cause of their falling, I will never eat meat, so that I may not cause one of them to fall" (1 Cor 8:13). He directs both those who eat meat and those who abstain from it from passing judgment on each other (Rom 14:2; Col 26). But absent its effects on others, "If I partake with thankfulness, why should I be denounced because of that for which I give thanks?" (1 Cor 10:30–31) Paul also characterizes abstinence from food as the "teachings of demons," since everything created by God is good and as long as it is received with thanksgiving, "nothing is to be rejected" (1 Tim 4:1–4).

Jesus and Vegetarianism

Naturally, Christian ethicists also invoke Jesus to make the case for vegetarianism. One tactic is to cite frequent references to animals in Jesus' teaching, such as the common characterization of his followers as sheep, or the analogy between fish and converts to his mission. A more ambitious approach is to argue that Jesus himself was a vegetarian (Akers 2000; Vaclavik 1989). The noncanonical Gospel of the Ebionites made this claim, according to Epiphanius, and Eusebius recorded that James, the brother of Jesus, was a vegetarian.

Contemporary scholars generally reject the suggestion that Jesus was a vegetarian, however. The bulk of the historical evidence points in the opposite direction, although the point is clouded by the fact that Jews of Jesus' time tended to draw a stark moral distinction between fish and land mammals. Jesus is depicted as consuming fish after his resurrection (Lk 24:42) and as giving fish to others (Mt 14:19–21). As a peasant Jew, it is doubtful that he ate meat other than fish regularly, but nothing in the Gospels suggests that he avoided eating animal flesh as a matter of principle. Had he done so, it seems likely that the Gospel writers would have found it worth noting. The Gospels disagree as to whether the last supper occurred as the Passover meal; if so, lamb was presumably served. Mark quotes Jesus as declaring all foods clean (Mk 7:19), a point affirmed by Paul (Rom 14:14).

A more promising strategy is to maintain that although he may not have advocated or practiced it himself, vegetarianism is a cogent extension of Jesus' emphasis on compassion and love. The Beatitudes, often taken to reflect the heart of Jesus' moral message, emphasize generosity towards the poor and meek (Mt 5:3–12; Lk 6:20–22). Since animals too are weak and

vulnerable in relation to humans, true Christian ethics requires regarding animals as appropriate recipients of mercy and care, or so many have argued. Granted, in several places Jesus sharply contrasts the value of human life with that of animals (Mt 6:26, 12:12; Lk 12:7, 24). But he also was a consistent servant to those most in need. He healed the sick, kept company with lepers and prostitutes, and washed the feet of his own disciples. Also, loving your neighbor as yourself is one of two great commandments Jesus uses to sum the content of the moral law (Mt 22:39). Arguably, this reference to "neighbors" should be understood inclusively, as properly encompassing both humans and nonhumans alike, even if Jesus himself would not have understood it this way (Miller 2011).

Along these lines, numerous Christian thinkers have defended vegetarianism out of respect for animals. Prohibitions on cruelty to animals have always been part of the Christian tradition. Various biblical passages indicate a human duty to relieve animal suffering (Prov 10:12; Exodus 23:5, Deut 22:4), and others command not subjecting animals to harsh treatment (Exodus 20:10, Deut 22:10; 25:4). Albert Schweitzer generalizes the point, describing "the ethic of reverence for life" as the "ethic of Jesus brought to philosophical expression" (Schweitzer 1999, p. 149). However, since Schweitzer's argument relies on an assumption from Schopenhauer's metaphysics – namely, the idea that all living creatures have a deep-seated "will-to-live" – its impact on other Christians has been limited. Karl Barth is another prominent example. He characterizes killing animals as a deeply reverential act of repentance. Given its destructiveness and capacity for inhumanity, it is permissible only as an expression of praise. Barth's case also has an eschatological thrust. He writes that vegetarianism is "a wanton anticipation of the new aeon for which we may hope" (Barth 1961, pp. 255–256).

The most prolific recent defender of Christian animal-based arguments for vegetarianism is Andrew Linzey. In early works, Linzey develops a case for animal rights on religious grounds – "theos-rights," as he called them – in a way intended to distance his position from secular animal rights arguments made by Peter Singer, Tom Regan, and other philosophers in the 1970s and 1980s. For Singer, what matters is that animals have sentience (Singer 1983); for Regan, it is the fact that animals are "subjects of a life" (Regan 1985). Linzey's view, by contrast, is that animals have rights only indirectly, as a result of "God's rights in his creation." God's creatures have value not from "any faculty or capacity, but in the will of God, which may be deduced from the givenness of spirit-filled individuals" (Linzey 1987, p. 76). Later works feature a different strategy. Seeking to turn traditional theological defenses of meat eating on their heads, Linzey argues that the fact that animals lack souls hardly sanctions eating them. Since they have no chance at an afterlife, their time on earth is especially precious, which means that man is responsible for protecting them (Linzey 2009). Linzey grants that humans and animals differ in moral status but denies that this justifies meat-intensive eating habits. Throughout his career, Linzey has been a gradualist, calling not for an end to meat consumption altogether, but for drastically curtailing the use of animals for food and experimental purposes.

Environmental Concerns

Christian principles also support a different case for vegetarianism. In ways that were not true a hundred years ago, meat production in much of the world today has very harmful environmental and human costs. A large share of the world's grain harvest goes to feeding livestock, grain that could be used much more efficiently to alleviate hunger in many parts of the world. Animal farming also contributes more to global greenhouse gas production than transportation and produces vast amounts of animal waste and pollutants. Raising billions and billions of animals for food places a tremendous burden on the world's water and land resources; millions of acres of tropical forest have been cleared over the past couple of decades to make room for cattle grazing. Given that populations in emerging countries like China

and India increasingly emulate Western dietary preferences, adverse environmental effects of meat eating will continue to escalate (Wirzba 2011). Since these effects will fall disproportionately on the world's poorest and most vulnerable, many recent authors stress that meat consumption is incompatible with the Gospel message of compassion, stewardship, and love for neighbor. For example, John Barclay contends that Paul's pragmatic contextualism implies vegetarianism as a new Christian imperative. "Our consumption of meat could literally cause the death of others, and it is impossible to square this with the Christian duty of love towards all those for whom Christ died" (Barclay 2010, p. 593).

A similar but more politically tinged version of this argument also has been made. Scholars often note that Jesus' meal-time inclusiveness – his practice of "open commensality" – was not merely a display of good hospitality. In its social and historical context, it also served a radical and subversive function. Jesus' outreach to clean and unclean alike, to both social outcasts and power brokers, was a strike against prevailing social boundaries and divisions. The Roman imperial economy had disastrous effects on peasant farmers and laborers, and the Romans were assisted by elite Jews who collaborated with them. Jesus' outburst in the Temple was not merely a reaction to perceived religious desecration, but a symbolic demonstration against Roman and Jewish power structures. It was a decidedly political act. Early Christians commemorated Jesus and his message not by eating meat, but by the communal breaking and sharing of bread, one of the humblest of all foods (Northcutt 2008). Just as Jesus used meals to protest oppressive powers of his age, by boycotting meat, contemporary Christians can likewise use their eating practices to resist some of the most destructive and degrading manifestations of present-day economic industrialization.

Summary

Despite being a minority view within the tradition, growing numbers of Christians see vegetarianism as an important, faith-based response to the contemporary world. While the Biblical evidence in favor of vegetarianism is mixed, most recent authors point out that the contemporary context is importantly different from that when the Bible was written. People today, especially in the affluent West, have many healthy nonmeat choices available to them, and the industrialization of modern farming has made the production of meat more objectionable than it was 2000 years ago. One sign of a change in perspective can be seen in a recent statement by Pope Benedict. He writes, "the natural environment is more than raw material to be manipulated at our pleasure; it is a wondrous work of the Creator containing a 'grammar' which sets forth ends and criteria for its wise use, not its reckless exploitation" (Benedict XVI 2009). Increased environmental pressures brought about by overuse of the earth's natural resources, chronic food shortages in many parts of the world, and the massive animal suffering involved in industrialized meat production are likely to keep the topic of vegetarianism on the agenda of Christian ethics for a long time.

Cross-References

- ▶ Christianity and Food
- ▶ Vegetarianism

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Christian Mysticism and Food

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Synonyms

Areopagite texts; Asceticism; Byzantine Hesychasm; Christianity; Medieval Mysticism; Mysticism; Non-anthropocentric ecological philosophy; St. Nicholaos Cabasilas; St. Symeon the New Theologian

Introduction

Food in the form of items with nutrients essential for survival (whether cooked or uncooked) is of key importance for the distinct Christian theological and philosophical perspective called "Christian Mysticism": it acquires a new spiritual and transcendent dimension. After an attempt to define and chart the rather loosely connected threads in philosophical and theological thought that can be grouped within this distinct form of mysticism, attention will be directed to the significance of food and drink for the achievement of the goals of Christian Mysticism and thus, the *soteriological* transformation of human beings. The discussion will close with an evaluation of the contribution of Christian Mysticism in the context of contemporary debates in the Philosophy of Food.

The Key Characteristics of the Christian Mystical Approach

The mystical direction or school of thought starts from the very early stages in the development of Christian Philosophy and Theology. It is widely accepted that the Christian Church was founded in a mystical filling with the Holy Spirit, with the Apostles forming the first community of Christian mystics (Fanning 2001; McGinn 1991). Christian Mysticism, in the form of both *mystike theologia* (mystical theology) and *praktike filosofia* (practical philosophy) is not (only) a way of seeing reality but also a way of life. According to Underhill: "The essence of mysticism being not a doctrine but a way of life, its interests require groups of persons who put its principles into effect" (Underhill 1932). As such, one can see this way of life in the very early Christian communities, who saw in the New Testament and in particular the Gospel according to St John the Evangelist and the Epistles of St Paul the kernel of their esoteric canon of spiritual and intellectual development. Early Patristic texts from key mystics (St Gregory of Nyssa, St Augustine, the Areopagetic texts, St Maximus the Confessor, and others) soon became (in both the Medieval West and the Byzantine East) the set canon textbooks for initiation in the mystical Christian philosophical and theological tradition. The first five centuries provided the basic formative context for the later development of Christian mysticism and formed the basic context of

the Christian mystical tradition (King 2003). This tradition became continuously enriched with new Mystical approaches, core texts, and methodologies in the first millennium, culminating in the famous proliferation of Mysticism in middle and late Medieval and Byzantine Philosophy and Theology (ca. 1000–1500) and early Renaissance. Putting aside the significant differences between the Western Medieval and the Eastern Byzantine mystical approaches, attention now will be directed to the depiction of some common themes and trends for the period till the sixteenth century in the form of the following key characteristics:

1. It cannot be described in terms of subjectivism versus objectivism (both in terms of epistemology and ethics).
2. The mystical experience is veridical (i.e., one can say when one has it), but, for its most important and key forms, it does not obey the laws of traditional logic and reasoning (there is, presumably, a new epistemology involved).
3. Body and soul are not divided, but they are unified in the attempt to achieve the mystical union of God and creation through illumination and deification.
4. According to many of its most profound and dogmatically conscious forms, Christian Mysticism cannot accommodate intellectualism nor a conceptualism (traditionally conceived) because all reasoning, imagination, and memory of sensory images are to be avoided; the organ of chief importance for the mystic is the heart and not the mind. It is important to note in relation to this feature that true Christian mysticism should not be transformed into some kind of sensualism or emotionalism, since emotions and senses of the body are also to be avoided in the attempt to unite with the triune God. Christian mysticism also should be distinguished from philosophical esotericism, since the early mystical Fathers tried to distance themselves from the Neoplatonist and Gnostic forms of philosophical esotericism of their time.
5. In some of the most important forms of Christian mysticism, the mystical union can be achieved while alive and with the body; further to this, later Byzantine and hesychastic mystics, such as St. Gregory Palamas (1296–1359) and St. Nicholaos Cabasilas (1319/23–ca. 1391), emphasize that this union is achieved via the divine energies and acts and not the divine essence (the triune God is infinitely more than the sum of His acts and energies).

While acknowledging that Christian mystical ideas were further developed and advanced in the subsequent five centuries, most of the important key characteristics were developed already by the late fifteenth century. So, it will be sufficient to take the above key characteristics as forming an acceptable set of what can be termed as "the Christian Mystical Tradition."

Food in the Christian Mystical Perspective

Food is treated as of key importance in the New Testament: Jesus abstained from food for 40 days, before He starts His role as a teacher (*Matthew* 4:2). He also responded to His disciples that "My food is to do the will of Him who sent me and to accomplish His work" when asked if he was hungry and wanted to eat (*John* 4:34). The early Christian mystics took it for granted that when one considers food, one has to have in mind that it was because of the wrong food consumption that Eve and Adam were expelled from Paradise (*Genesis*, Chap. 3). This theme was repeated in the mystical writings of many early Fathers and became a standard reference in Medieval and Byzantine mystical literature. Food in this way acquired a mystical significance and meaning that was ontologically related not only to the Old Adam (Adam after expulsion from Paradise) but also to the New Adam (i.e., the ontologically transformed human after deification or illumination) that the mystics tried to exemplify with their illumined life. But how is this conceptualization of food related to the Christian mystical theology and philosophy and the role of the New Adam in creation?

From the above discussion of the main characteristics of Christian Mysticism, one can see

how impossible for a mystic is to be *anthropocentric* (i.e., to regard *anthropos* or human as the focal point of all meaning and value) when creation becomes the focal point of any investigation. Also, one can see how alien should the mystical way of life be to established rules of human reasoning, if it is to achieve the desired goal of union with the triune God. It is also evident that humans can (and should) achieve a new awareness of their role in creation and of how they should behave towards other creatures, during the *ecstatic rapture* that the mystical way of life entails. This issue can become clearer if we look at characteristic examples of Christian Mysticism: the areopagetic texts (which were texts attributed to St Dionysius the Areopagite, the pupil of St Paul, probably written around the sixteenth century), St. Symeon the New Theologian (949–1022), and St Nicholaos Cabasilas (ca. 1319–1392).

The areopagetic text *Epistle to Titus* makes some rather common place by its time of creation remarks about the mystical significance of food, in solid and liquid form. Food in solid form is the mystical knowledge achieved with the help of Divine Wisdom through the senses (in the form of a stable, unifying, and indivisible knowledge that provides solid nourishment for the spirit), and food in liquid form (cited forms: dew, milk, water, wine and honey) is the actual divinations or illuminations that make deification possible and effected: water gains the mystical power of eternal life, wine a mystical revival ad strength, and honey provides purification and preservation. And through them Divine Wisdom produces a veritable good cheer that both nourishes and perfects (*Epistle to Titus, Hierarch*, Sect. IV; Dionysius the Areopagite, 1897). Creation and food produced and acquired through it thus gains a mystical role in salvation. This theme is further elucidated and enhanced in the works of the later Byzantine Saints: St Symeon the New Theologian and St Nicholaos Cabasilas.

Actually, St. Symeon the New Theologian emphasizes that any kind of animosity or improper attitude towards creation is the result of Adam's fall from heaven and comes as a result from it. Mystical union with the triune God will not only return man to the mode of existence he had before the Fall, but it will return in him the wonder and full respect with which he needs to regard God's Creation (*Hymn* 32). He further on claims that the use of material goods and creation for man's survival is not evil but it should be carried out with no "desire of the flesh," no "desire of the eyes," and no "vain thoughts" (*Catechetical Orations*, 5). This further supports St. Symeon's conviction that if a man is to be united with God mystically, he must do so with a complete transformation of his desires, arrived at through the ecstatic love towards the Creator and the consequent abstention of any thought and behavior that is not directed by this ecstatic love towards the Creator. Man thus becomes not only a guardian of Creation through asceticism but considers it as an invaluable means for his salvation; this forces upon him a transformation of his desires and the way he looks at Creation (Krivocheine 1986; Kesselopoulos, 2001).

This mystical perspective has many advantages over the traditional philosophical and theological contemporary approaches to the problem of feasting in a world that requires fasting:

First, it is not dividing the world into the realm of the subjective and the realm of the objective, or (put in other terms) between the body and the mind, the material and the immaterial. As indicated above, both matter (body) and spirit are united in the mystical union in a new form of hypostatic existence.

Second, it allows for a new non-anthropocentric epistemology and ethics: man does not exist for himself, but *for God*, and Creation is the place which God created for man's salvation. In his ecstatic love towards God, man cannot regard the world for his own means and interests but through his ecstatic love towards God (Athanasopoulos, 1999).

Even though these advantages are a real improvement on the philosophical and theological impasse in contemporary debates, how is the demand for sanctification of nature to be met with this perspective in mind?

Vegetarians and vegans here may come back to indicate that this mystical standpoint may be interpreted as indicating that man has the role of

a simple attendant or housekeeper and thus Nature may be regarded as part of the household items such a housekeeper attends to, with no further responsibility or value to him. But St. Nicholaos Cabasilas claims that it is here that man's role in the Divine Eucharist as returning Creation to its rightful place can be most clearly envisaged.

Man, in the process of the Divine Litourgy, and while performing the sacrament of Eucharist, offers to God what is made by God (the priest announces in the Eucharist while offering the Holy Gifts that he offers them as of God's to God: *ta sa ek ton son soi prosferomen*). Cabasilas stresses that the part of Creation that is offered in the altar is not man's but God's. By offering to God what is God's, man enters into a mystical union with the triune God and becomes united with Him through grace, placing Creation in the proper *soteriological* perspective. By re-consecrating nature and creation within the process of the Divine Eucharist, man finds his true role in Creation, becomes light himself, and mystically unites with God, radiating light back into Creation. Man does not exist to use nature and creatures but to consecrate them and refer them back to their rightful Owner and Creator. And man, according to Cabasilas, can only do this once he lives through the mystic life of the consecrating Church and its mysteries. It is only through the mystical realization of man's failure to be a true son and making of God that man can realize and achieve the mystical union with God (Cabasilas 1960).

Through the mysteries of the Church and most importantly the Divine Eucharist, where bread and wine are offered and become the Blood and Body of Christ, man becomes holy again, and with the return to his holiness, he can further sanctify nature and offer it to God. Cabasilas here is in full agreement of the Orthodox Mystics before him, in claiming that the "naming" of Creation by man during Creation (*Genesis*) is part of this re-sanctification of Nature. Man was created to sanctify Nature and not destroy it according to the Orthodox Mystics.

It is important to emphasize that what is offered in the Eucharist is not owned by man. Man is utterly naked, defenseless, with no justification, and without pretense, when facing his Creator. The mystery of the all powerful grace and mercy, thus, becomes the true *soteriological* and *sanctifying* force.

Man performs a *reasonable* sacrifice of his will over things and himself to gain the object of his ecstatic love, without losing his personal and hypostatic characteristics, so that he can find what he ecstatically loves and desires. Trying to explain the words "reasonable sacrifice" in the Divine Litourgy, Cabasilas claims that the sacrifice is *reasonable* because it is *mystical*: the priest, by pronouncing the appropriate words, does all that is necessary to make the offered part of Creation holy again and suitable for sacrifice to God, bringing man back into his true role in Creation, in accordance with the *Genesis* book in the Old Testament (Cabasilas 1960).

According to Cabasilas, "the *sacrifice* is truly *an act* and *a reality*," and even though the priest only says specific names and words, these become significant and mean far more than perceived by human ears, through the mystery of divine grace, in the same way that in the *Genesis*, man by naming nature he is not just saying names and words empty of mystical and theological significance. It is important to emphasize that this *use of names* and *words* lies within the mystical tradition of the Areopagetic texts. It is through the names of God that we can gain a mystical awareness of His *apophatic* and *cataphatic* realization and, thus, be led into a mystical union with Him. In the same way, it is through the *naming* process and, via this process, the re-sanctification of Nature, that we can achieve the mystical union of God with creation. Man thus, becomes *synergos* (i.e., collaborator) in salvation with God, gaining himself a new *soteriological* perspective.

Cabasilas in a text, where he explains the difference between the new and the old Adam (man after and before the Fall), put forward the following ideas: the true bread (*o alethes artos*) is Jesus Christ, who, in the same way that the usual bread strengthens man's heart and gives him physical strength, came down and brought a new form of life and strength. It is Him (Jesus) that one

should strive to incorporate within constantly, to be preserved in the constant and continuous time of hunger (*limon*) that one lives in while on this earth (*Patrologia Graeca*, vol. 150).

The above remarks are relevant not only for the development of Christian Mysticism in Byzantine Civilization but are equally valid for Medieval Europe. Examples are abundant in the writings of Johannes Scotus Erigena (810–877), Bernard of Clairvaux (1090–1153), Richard of St Victor (ca. 1120–1173), works related to Francis of Assisi (1182–1226), Bonaventura (1221–1274), the Cistercians and the Beguines, Meister Eckhart (ca. 1260–1327/8), and others (Fanning, 2001; King, 2003; Walker Bynum 1985).

How the Christian Mystical Approach Relates to the Contemporary Philosophy of Food

In current ethical discussions about the consumption of food, there is a growing tendency to provide arguments in terms of the rights and duties of the people and beings involved, either recognizing in them intrinsic qualities, which can justify the existence of human duties towards them and their rights for respect by humans, or by linking them to the rights and duties of others, who have some interest in the consumed animals' fate or well-being. So, for example, in the case of some philosophical arguments put forward by vegetarians and/or vegans, animals should not be consumed and in general all suffering to them should be restricted, if not avoided at all costs, on the basis of their inherent moral qualities and their well-being. This places ethical restrictions on what one can eat and drink and, in some way, forces a fast upon humans on moral considerations. Thus, in general, the argument for an abstention from all meat and dairy products is that one should not eat meat nor drink milk, because either this action makes animals feel pain/discomfort or because such an action reduces the well-being of other people in the developing world (since the resources used to feed animals can be used to feed starving people). In both cases there is some sort of a contract involved (between humans and the animals or between humans in more and humans in less-developed countries) and through the consumption of specific foods and drinks one breaks the moral rules of this contract.

Some philosophers (e.g., Peter Singer and Tom Regan) actually go to the point of making parallelisms between the "speciesism" that existed between people of different colors and races in the recent past and the *biological* now *speciesism* that exists between humans and the rest of the animal kingdom (cf. Singer 1975; Regan and Singer 1976). They make the claim that the same moral rules that bind the different human races and form a contract that is sanctioned by international legal documents and agreements (such as the United Nations Declaration of Human Rights) bind humans as well to the rest of the animal kingdom.

This approach has influenced a large part of the relevant current bibliography on the ethics of food and the 1970s texts discussing the "speciesism" approach are now standard textbooks in Environmental Ethics and any set bibliographies on the Philosophy of Food and Drink.

It has been pointed out however, from the early 1980s, that the Singer-Regan approach cannot offer convincing arguments in its support. It is not only that the contract theory that it alludes to is fallaciously entertained (since there is a need for a further proof that animals – or other, even future, people concerned – can take part in such a contract and that they can both represent and promote their interests through this contract), it is also that for many adherents of vegetarianism or veganism, the contract theory (or any theory based on duties and rights) is not a good way to put forward their viewpoint and arguments for the intrinsic value and sacredness of animals, plants, and the other beings that exist in the world but are not created nor produced by humans. They make the point that even if a human being was the last person on this earth with the possibility of destroying earth and all the beings on it after his/her death, it would be morally wrong to do so, not on any contracts (which would not hold

after death in any case), but on the grounds that nature and everything nonhuman made is intrinsically valuable with a value that is independent of any human consideration, making them *sacred*. They also point out that resorting to anthropocentric values and moral qualities (e.g., moral virtues or elaborate rule and/or contract theories) would not satisfy their requirements, since they claim that nonhuman made beings cannot be examined in human terms and human categories of thought.

Philosophical discussions about the consumption and production of food thus need a fresh air that will provide new sets of arguments, quite distinct from traditional conceptions about human rationality and its modes of operation. As indicated above, Christian mysticism can provide an alternative which will allow for the *re-sanctification* of nature that is necessary to get contemporary philosophers and theologians out of their philosophical and theological impasse.

Summary

Feasting and fasting, as primarily concerned with the way humans grow and sustain themselves, should not be treated as unimportant nor as not directly concerned with the way one can gain self-knowledge and self-understanding and knowledge and understanding about the external world and Man's relation with God. Mystical metaphysics and ontology here are interconnected with Mystical anthropology and ethics. Within Christian Mysticism, asceticism exists not for the mortification of flesh but for the reorientation of our intellectual and volitional powers. Food and drink thus become means of spiritual nourishment: the priest in the mystery of the Divine Eucharist offers parts of creation to God in the form of a "reasonable" sacrifice, but neither the gifts offered nor the words used belong to the priest, who is with no pretense and no justification. Creation becomes thus autonomous and can only have a separate existence from God, when it *lacks ecstatic love*, the true criterion of the mystical way. Creation and man, in a world void of ecstatic love, thus, become both alienated and alienating. Both feasting and fasting should become one and have as their goal the mystical transformation of the human will, so that it can unite and reside in God's Will.

Cross-References

- ▶ Christian Stewardship in Agriculture
- ▶ Christianity and Food
- ▶ Environmental Ethics
- ▶ Food Rituals
- ▶ Food Not Bombs
- ▶ Food's Purposes
- ▶ Food-Body Relationship
- ▶ Peter Singer and Food
- ▶ Right to Food in International Law
- ▶ Systemic Ethics to Support Wellbeing
- ▶ Vegetarianism
- ▶ Virtue Theory, Food, and Agriculture
- ▶ You Are What You Eat

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Christian Perspectives on Food and Agricultural Ethics

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Synonyms

Christian dietary habits; Christian farming; Christian religious agrarianism; Christian sustainable agriculture; History of Christian agriculture

Introduction

There is no normative Christian view on any subject, let alone one as comprehensive as perspectives on food and agricultural ethics. The subject is further complicated because there are over two billion global Christians. Rather, it is more accurate to speak of "Christianities," given the diverse cultural, historical, geographic, and institutional histories of Christianity. As a result of this diversity, this entry can but make reference to key guiding ideas, debates, theologians, food activists, farmers, and lived practices in regard to various food and agricultural ethics that have manifested throughout Christianity's diverse history, up to its even more diverse present, with a special focus given to Western Christianity.

Christianity arose within a cultural and geographical context that was shaped by Hellenism, the Roman Empire, various mystery cults, and diverse Israelite cultural and political identities. To understand the development of Christian views of agriculture and food, it is important to have a cursory understanding of dominant themes about nature, food, and agriculture that were present in these other groups, as their politics, cultural views, and engaged practices influence early, and even some contemporary, Christian perspectives on food and agriculture (Glacken 1967; Feeley-Harnik 1994).

Cultural Milieu of Early Christianity

Greek Hellenism

The ancient Greeks had a plethora of philosophies and deities and were a mixture of early cities surrounded by agricultural fields. A famous Socratic dialogue from Plato suggests that an antipathy toward the countryside, and nature broadly, existed in ancient Greece. In his exchange with Phaedrus, Socrates mentions that knowledge is to be found in the city, and not in the bucolic country. This Socratic chain of thought mixed with Plato's realm of pure ideal forms, leading some scholars to postulate that in Greek society there appeared certain dualisms, or what ecofeminists call a logic of domination, where one half of the dualism was privileged over the other: city over country and ideal forms/ideas over the world of flesh/nature. These ideas were married with an Aristotelian view of the cosmos that assumed a great-chain-of-being, with the observable universe based on the four elements: earth, air, fire, and water. Taken together, it is postulated that this view of humanity and nature generated an incipient anthropocentrism that influences Paul's letters (Romans 1:24–25 and Philippians 3:21, but see also Psalm 8 and Psalm 115 for evidence that such cultural views predate Paul) and thus early Christian understandings of nature, especially in the divide between a fallen, corporeal body and earth and a transcendent soul that is bound for heaven or hell for eternity. It should be noted, however, that Hellenistic Greeks also actively attempted to cultivate a working knowledge of their landscapes, seen in the plant geography of Theophrastus' *Enquiry into Plants* and in advancements they made in plant and animal

breeding. Altogether, though, "there are substantial reasons for believing the roots of modern attitudes toward nature are to be found in the Hellenistic age" (Glacken 1967), and these roots are based upon city/country and human-nature distinctions, distinctions that largely carry over to Christianity and Christian agricultural ethics, past and present.

Rome

Rome was built upon Greek Hellenism, and as Rome grew in size, so did its ecofootprint, as the Empire was built upon grids of roads and irrigated canals. Some posit that the Empire overexploited its soils, which is one of the main reasons it eventually collapsed. The Empire aggressively deforested the lands it conquered as it needed timber for building, and its population also cleared land to farm (Perlin 1989). Both Hesiod and Virgil, along with Seneca and Ovid, write longingly of a bucolic nature that brings humans closer to the gods through agricultural work. However, for the most part, these and other writings about agriculture in the Roman era recognize that the soils have been depleted and that the golden age of Rome was a more fecund, less toilsome time, when citizens were also physically and morally superior than those in the latter Empire. Besides these views of a golden age, there also existed in Rome a cyclical calendar based upon various feasts and worship of various agricultural deities, some of which were related to mystery cults.

Israelites

Besides the dualisms found in Greek thought that manifest in Paul's letters and that shape centuries of Christian thought about human-nature-Divine relations, the other biggest contributor to historical as well as contemporary Christian views of agriculture and food comes from the Israelites. Jews at the time of the historical Jesus were diverse in political and cultural views, although they were still largely united under the Second Temple and its ritual practices based upon the agricultural calendar. Many scholars have written about Jewish agriculture and food, using archaeological and historical-critical methods to better understand the ritual and agricultural practices of this era of Israelite/Jewish history, and these writings expertly capture some of this diversity. Given space constraints, a cursory overview of proto-Jewish farming, food practices, and foodways is covered here.

The creation story found in the Hebrew Bible's Genesis 2:7 states that the first human, Adam, comes from the soil. This is the translation of the Hebrew term, *adama(h)*, out of which Yahweh/YHWH/God forms humans. This suggests the ancient Israelites had a nuanced understanding of their local environment and that as an agrarian and farming people, their conception of self was intimately tied up with their relationship with their farming lands and grazing herds (Davis 2009). This does not mean they practiced what today may be called sustainable agriculture, given their soil loss and exploitation of their ecosystems, but it does mean that food and agricultural practices and ethics figured prominently in their identity as a people (Hillel 2007).

Some of the agricultural practices mentioned in Torah include a sabbatical year for the soil so it may rest; companion planting; recognition of sacred grains and plants, including the Seven Species (Deuteronomy 8:8); the importance of fruit trees (Proverbs 27:18); and the covenantal gift of good land (Deuteronomy 8:7–10), to name a few. Yet there is also a tension, as seen in the story of Cain and Abel, where Yahweh chooses Abel's offering of part of his flock, which some interpret at the benefits of pastoralism. However, out of jealousy, Cain kills Abel, and his punishment is to toil in the fields as an agriculturalist (Genesis 4:2–16), where the soil will not offer its strength or nourishment to Cain and his descendants. Some point to this passage as being an indictment against practicing agriculture, although as with any sacred text, and including especially the Hebrew Bible (Christian Old Testament) and the New Testament, there are multiple, and at times competing, interpretations of this and many other agriculture-related passages. For example, there is no one approach to interpreting, and thus basing contemporary farming practices on, the command to "till the garden and keep it" (Genesis 2:15).

Other agrarian and food-centered practices of the Israelites informed early Christianity. Mostly this was by shaping what Christianity was not, largely because the early Christian communities had to differentiate themselves to gain adherents and to open up the community to non-Jews (see especially Galatians 3:28). This is seen, for example, in what became known as the Final Supper, at which point Christian theologians argue/interpret that Jesus moved beyond the in-group Israelite-only Passover Seder and made the meal universal and inclusive for all via what becomes the practice of communion/Holy Eucharist. Nonetheless, these other Israelite food practices include a variety of blessings (*brachot*) over wine, water, meat, cheese, and other food items. Customary traditions also formed around saying blessings after food was consumed (*bensching*). The Israelites of Jesus's time also had a sophisticated ritualized calendar centered upon the power of the Aaronic priesthood in the Second Temple and that was based on an agricultural calendar. Some of the major Jewish holidays and Temple rituals centered upon food, most especially those of Passover (*Pesach*), the Feast of Weeks (*Shavuot*), and the Festival of Booths (*Sukkot*). Of final mention is the tripartite Torah law that required Jews to keep kosher (*kashrut*), with interpretation of these laws building over the centuries in the Talmud. Taken together, the agrarian cultural milieu of Judaism, coupled with the very clear Jewish connection with food and agriculture in both dietary practices and ritual requirements and calendar, combined to make food a central element of Christianity.

Early Christianity and Food

Early forms of Christianity centered upon the life and teachings of Jesus and then especially the apostolic work of Jesus's original followers. After his death, the teachings and life of Jesus became codified after a few centuries in the New Testament. Because the early Christians were straddling the iterative worlds of Judaism and Roman paganism, they had to communicate Jesus's universal atonement through these mediums. One way of communicating this message was through food, food rituals, and diet (Jung 2006). Parables about wineskins (Luke 5:36–39), putting away anxious thoughts about food and drink (Matthew 6:25), and the metaphor of wine meaning being inspired by God (Jeremiah 23:9) all developed and were written down. There are also passages in the New Testament where Jesus and his disciples challenge Jewish food habits by interacting with and feeding non-Jews, including miracles of feeding the masses (Matthew 15:32–39 and Mark 8:1–9) and eating with Pharisees without washing hands (Luke 11:37–41).

As with the Hebrew Bible/Old Testament, the threat of a disciplinary famine and punishment of failed crops looms large for not following ritual and other religious protocol. This clearly suggests that some form of recognition existed about the fragility of agricultural production, although in an era without meteorology, the understanding for crop failures was related to concepts of sin and lack of fidelity to covenants.

Early Christian communities struggled with oppression under Roman rule until the Edict of Milan and conversion of Constantine. Once Christianity was made, the religion of empire, its power, and influence grew exponentially. One way it spread was through food and food customs, which coalesced around "four underlying themes: commensality, fasting, the sacrament, and bodily health" (Eden 2011).

While modern-day connections between soil health and bodily health motivate many who engage in sustainable agriculture and who discuss agricultural ethics, it would be a misrepresentation and faulty reinterpretation of the majority of Christian tradition(s) to see a clear concern for soil and livestock/animal health as being a focus of the myriad and various historical Christian foodways that developed over the centuries. The ongoing ecological Reformation of the world's religions, including Christianity, is a product of a post-Darwinian, post-ecological world of the last 150 years. It is also one which is slowly gaining in followers after the 1962 publication of *Silent Spring* and the 1967 publication of Lynn White, Jr.'s

"The Historic Roots of our Ecologic Crisis," where Western Christianity was blamed as the culprit for ecological decline. The modern, industrialized world, including the industrialization of commodity agriculture, is very different than that in which major Christian theologians wrote, from Paul to Augustine to Aquinas, to the split between Western and Eastern churches, through the Reformation and era of European colonial expansion. None of the theologians and church leaders during these centuries had the benefit of microscopes and soil science, so knew nothing of soil formation and microbiology. Nor did they have the ability to use satellite imagery to understand how farming practices at various scales, using various chemical-based and irrigation-driven technologies, influence ecosystems, ecosystem processes and services, and the health of various life forms.

While there are examples that can be recovered and reinterpreted using modern-day ecological and sustainable agriculture lenses, such as Saint Francis and his views about nature, the historical reality is that most Christians, including lay, monastic, and elite leaders, operated within a cosmology of sin, fall, temptation, and redemption. Within this theological and cultural milieu, work in transforming the planet for human use (the "dominion over" of Genesis) was seen as the vocation of most Christians. God created ex nihilo and on this blank slate gave humans dominion and the power to name the animals and plants. As Christianity spread, pagans and their agricultural calendar and cycles were encountered, but these were replaced by liturgical meals devoid of such traditional feasts. Furthermore, some saints, angels, and even the Virgin Mary became associated with aspects of food cultivation and celebration, but this occurred more at the level of lived religion and was not generally seen as orthodox teaching. Many scholars claim that the anthropocentrism of Christian Europe, coupled with the inherent brittleness of domesticated agriculture, led to the demise of the Middle East's and Europe's flora and fauna. They claim that this process was repeated on *terra nullius* in the "New World," where European seeds, farming practices, domesticated species, and religious views rapidly changed the cultural and biological landscapes of the Americas (Sale 2006). It is to this legacy of farming practices and teachings about creation that contemporary Christians are responding, with a major avenue being through revisiting, reinterpreting, renewing, and creating afresh new perspectives on food and agricultural ethics.

Contemporary Christian Views on Food and Agriculture

Growing numbers of Christians the world over, from laity to positions of leadership, are revisiting Christian views of agriculture. These views include reevaluating Christian duties and ideals as consumers of food products and also as producers and growers of food products. Agricultural ethics broadly are "concerned with the values and moral issues involved in food production and farming practices" (Haynes 2009). The larger category of ethics, or questions of good/bad, good/evil, and morally obligatory/avoidable actions, as well as issues about duty, virtues, and justice, is also central to religion, while specific ethical issues have been central to Christianity since the time of Jesus. It should come as no surprise then that ethical deliberations about religion and agriculture are emerging in response to the industrialization and globalization of the world's food supply; such concerns are also being influenced by increasing knowledge about climate change, the relationship between food and physical health, and the increased popularity of alternative food movements. The remainder of this entry investigates some of the varieties of contemporary Christian perspectives on food and agricultural ethics, where these perspectives focus on issues of food and agricultural justice, and sustainable food praxis. This investigation includes highlighting key thinkers, farmers, and emerging theological perspectives about food and agriculture.

Two of the most well-known Christian advocates for sustainable agriculture are the North Americans Wendell Berry and Wes Jackson.

Berry is famous for bridging the gap between the Western, and later, North American, agrarian lineage and the ecological sciences. He uses sustainable farming practices on his farm in Kentucky and his experience as a farmer influences his poetry, essays, and novels. His 1977 classic, *The Unsettling of America: Culture and Agriculture*, is one of the first sustained critiques about the corporate takeover of industrial agriculture and the impact this has had on America's rural farming communities. While his personal faith is not central to his nonfiction work, it repeatedly enters into his poetry, essays, and fiction work, so that his Baptist views readily inform his perspective on agriculture, the American extractive economy, and Christianity at large. Berry is therefore probably the most well-known and most quoted advocate of a modern-day Christian sustainable food and sustainable agricultural ethic, one grounded in agrarianism and thrift, where humans are seen as utterly dependent upon the miracles of seed and soil.

For Berry's theocentric, Biblical view of agricultural ethics, our duties are to generate cultures of place that are embedded within bioregions. These cultures of place should actively work to cultivate the soil through sustainable animal husbandry and sustainable agricultural farming practices. As Berry writes, good farmers "take seriously their duties as stewards of Creation and of their land's inheritors, [and] contribute to the welfare of society in more ways than society usually acknowledges, or even knows. These farmers produce valuable goods, of course; but they also conserve soil, they conserve water, they conserve wildlife, they conserve open space, they conserve scenery" (2009). For Berry these valuable goods are produced within a context of being stewards of Creation, such that Berry's ecological agrarian ideals are thoroughly influenced by his own reading of the Bible and his own life long involvement in Christianity.

Berry has cultivated and produced this Christian view of food and agricultural ethics in dialogue with his contemporary, the plant geneticist Wes Jackson. Jackson and Berry began a mail-based correspondence in the late 1970s, and this correspondence developed into a lifelong friendship, where the two have explored cultural narratives and views of farming and how these influence farming practices. Jackson is best known for the work he is undertaking at the Land Institute, a research station he began with his wife in Salinas, Kansas, where the Institute is attempting to develop perennial polycultures that mimic the original ecosystem of the Great Plains (Jackson 1985). Like Berry, Jackson is an advocate of sustainable agriculture and is critical of reductive, mechanistic science and its impact upon the Green Revolution. He is also a vocal critic of the industrialization and perceived corporate takeover of modern agriculture. Like Berry, Jackson is also a Protestant, so that his views of agriculture are influenced by his reading of the Bible.

Taken together, Berry's and Jackson's respective work as writers, farmers, and lay theologians/interpreters of scripture, coupled with their popularity in scientific, academic, farming, and Christian communities, has helped create the foundation of contemporary Christian sustainable agricultural ethics. Their influence is seen in other leading Christian farmers and sustainable food advocates, ranging from Joel Salatin of Polyface Farm; to Sister Miriam MacGillis of Genesis Farm (equally influenced by Father Thomas Berry); to the agronomist Gary Fick and his treatise *Food, Farming, and Faith* (2008); to the Christian organic farmer and distinguished fellow at the Leopold Center for Sustainable Agriculture, Fred Kirschenmann (2010). Salatin has become a well-known "crusader," whose articulate criticisms of post-Green Revolution agribusiness and corporate farming have earned him a following. He presents himself as a humble libertarian farmer who lives in rural Virginia and who sees his farming as being inspired by Christian views of stewardship of the environment. His farming practices include free range pasturing of cows, chickens, pigs, and other animals; on-site humane slaughter; rotational grazing; and growing of polycultures, and he is active in training the next generation of farmers by offering on-farm internship positions. MacGillis is inspired by the agricultural insights of Wendell Berry, but more so the Universe Story

and the teachings of Thomas Berry. These sources influenced MacGillis, under sponsorship of her Dominican congregation, to turn their farm into a biodynamic Community Supported Agriculture campus and teaching center where organic farming methods have been practiced since 1980. This pioneering work has resulted in MacGillis becoming recognized as a leading voice in Catholicism and especially among Catholic women religious, advocating for Christian agricultural ethics that support sustainable practices. Gary Fick is an agronomist at Cornell University, whose 2008 book marries his Protestant reading of the Bible with years of researching sustainable agriculture issues, leading him to write about 15 essentials of agriculture based on Biblical insights. This list ranges from respecting and protecting soil to being concerned for farm animal welfare, to maintaining soil fertility, to providing a living wage for farmers, to recognizing that agriculture has profound religious and ethical components, including the assurance that each person is fed so they can celebrate life and fulfill God's plan for them. Lastly, Fred Kirschenmann uses organic farming methods to farm his family's North Dakota farm and is a leading activist-scholar researching and writing about sustainable farming within a North American University context. Kirschenmann has developed an incarnational understanding of God/Christ, where he believes that God/Christ is present in all beings, and in all on-farm relationships, that are found on farms: from animals eating, mating, procreating, and dying to plants seeding and growing, to the harvesting and eating of farm products. For Kirschenmann, this incarnational relationship recognizes the divinity in all relationships on a farm and in farm soils, so that sustainable farming becomes a vocational act that allows a farmer to help tend to the Garden of Eden while serving the tree of life contained therein.

The above Christian sustainable food advocates have been instrumental in developing a modern-day Christian-based agricultural ethic that takes sustainable farming as its central point of view. This ethics contains concern for farm workers, farm land, and natural resources; advocates for living wages; is concerned with food justice and food access issues; and takes seriously the biblical task of being stewards of God's creation. Many Christians who advocate for sustainable agricultural ethics can be labeled as theocentric, while some might be considered panentheistic, while still others are evangelical and more conservative with their understanding of the Christian God. The stewardship ethic is also spreading into Global Christianity, with African churches becoming involved in permaculture; Latin American churches becoming involved with land issues and peasant agriculture issues; to food activists reinterpreting biblical teachings such as gleaning from the fields, where they are bringing excess crops to food banks and homeless shelters; to Catholic Worker Houses using sustainable farming methods to grow food that is then served to homeless people. In terms of institutional teachings, the United States Conference of Catholic Bishops has made a clear call for the practice of sustainable agriculture, and the Conference links such practice with issues of environmental justice (2003).

Despite this fecund growth in contemporary Christian sustainable agricultural ethics, the above leaders, farms, and movements should not be interpreted to represent the majority of Christian views about contemporary food and agricultural ethics more broadly. Rather, concern about food and agricultural ethics are still relatively low for most global citizens, at least in industrial and post-industrial nations, although the contemporary movements outlined in this entry are gaining in adherents and popularity, and this extends into a variety of Christian demographics. The recent trends suggest that more institutional bodies are beginning to speak about food issues from the contexts of physical health, community health, and/or planetary health and are connecting such concerns to Christian and biblical teachings. Trends suggest that concern about contemporary food issues will continue to grow in Christianity, with a slow but vibrant growth in concern about sustainable agricultural ethics (Wirzba 2011).

Two areas of many where there is still contention about Christian perspectives on food include

contemporary Christian views about population growth and about genetically modified organisms being used in food and agricultural production (Bruce 2009). Where Christians might align on these issues in part depends upon if they have liberal or conservative interpretations of scripture and if they support free market ideologies. Catholics, along with many conservative Christian groups, are against population control. However, world population is expected to grow to at least nine billion people by 2050, and studies suggest that current global food production will need to double the 2010 output by the same year to meet growing global demand. This production will need to occur in a world undergoing anthropogenic climate change and suffering from loss of fresh water reserves. Some conservative evangelical groups, such as the Cornwall Alliance, believe in the power of human ingenuity and creativity and in free market economics and are confident that God's grace will allow for the suffering of humans throughout the globe who do not have from inadequate supplies of food and water to be alleviated. They are also supportive of using transgenic technologies to create nutrient and vitamin-enhanced food crops that can help provide what they perceive to be more nutritious foods to the millions around the world suffering from food poverty. This is just one of the many emerging Christian views on transgenic technologies, and prefaces debates to come in regard to this and the issue about human population size.

Summary

Overall, there are multiple Christian views from around the globe on food and agricultural ethics. It can be said with great confidence that there is an articulate and theologically grounded view of food and agricultural ethics that has emerged in the last 30 years in regard to some parts of global Christianity that expresses concern for sustainable agriculture. Some of the key North American exemplars have been highlighted in this entry, but this is not to suggest that there are not leaders in other parts of the world acting in both institutional and personal settings. Future scholars of food issues will be helped by further research undertaken in both contemporary practices and theological understandings of food and agricultural issues, as well as in archival research, so scholars can obtain a better picture about Christianity's diverse historical relationship with food, agricultural ethics, and agricultural practices.

Cross-References

- ▶ Agricultural Ethics
- ▶ Ancestral Cuisine and Cooking Rituals
- ▶ Biodynamic Agriculture
- ▶ Buddhist Perspectives on Food and Agricultural Ethics
- ▶ Christian Ethics and Vegetarianism
- ▶ Christian Mysticism and Food
- ▶ Christian Stewardship in Agriculture
- ▶ Christianity and Food
- ▶ Corporate Social Responsibility and Food
- ▶ Food Rituals
- ▶ Food Waste and Consumer Ethics
- ▶ Hinduism and Food
- ▶ Islam and Food
- ▶ Jainism and Food
- ▶ Judaism and Food
- ▶ Permaculture

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Christian Stewardship in Agriculture

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Synonyms

Agricultural stewardship; Dominion; Earthkeeping; Environmental stewardship

Introduction

This essay focuses on the uses of Christian stewardship in response to environmental concerns, especially in the field of agriculture in North America. The term stewardship means, at a basic level, responsible management of resources. This term has a tradition of use both among farmers and among Christians in North America.

The term stewardship is commonly used in farming circles to denote, at a minimum, responsible use of farming inputs, including fertilizer, herbicides, and pesticides, so that they are maximally effective, with few negative side effects. Stewardship in farming can, however, encompass much more. Practices of stewardship in farming that are more broadly focused attempt to take responsibility for the positive influence farmers can have on the wider ecological system, as well as the long-term health of their farms.

The term stewardship also has a history of use within Protestant denominations in North America. In this case the resources to be managed are primarily financial. Good stewardship within a congregation encourages donations and responsibly manages financial resources for the maintenance of the congregation and church mission work. Many Christians interested in responding to environmental concerns also applied it to mean responsible care for, and use of, creation, or management of natural resources.

The term in both of these Christian uses, as management of either financial or natural resources, stems from biblical stories of the role of a high-ranking servant, the steward, often given significant authority, who is responsible for the master's property. Especially in the case of care for creation, stewardship is also closely connected with key passages in Genesis. Stewardship thus combines a measure of power and humility, responsibility, and authority. The extent to which each element is weighted depends on the interpretation of the scriptures in question. The difference is often expressed by contrasting dominion with stewardship.

Many of the theorists discussed below emphasize the reverberations of Christian attitudes toward nature and land use into wider North American culture, from colonization to the present day. The meaning and practice of stewardship in agriculture is closely tied to these Christian ideas.

Stewardship, with its roots in both farming culture and Christian tradition, seems a natural ethic for Christian farming. However, Christians do not agree on the meaning of stewardship, nor on what is demanded of farmers in applying the concept to contemporary farming. Thus, the multifaceted nature of "stewardship" presents

challenges to Christian farmers who attempt to practice it on their farms.

Critics have further raised questions about whether a stewardship ethic can effectively moderate problematic aspects of industrial agriculture at all. Modern industrial agriculture places significant pressures on farmers to increase farm size and to specialize in intensively farming one or two commodities. These pressures often work against what is necessary for the best agricultural stewardship. For a stewardship ethic to remain effective, it requires practitioners to be motivated by values beyond economic returns, and for farmers to maintain a meaningful connection with the land and animals under their care.

This essay focuses on three areas. First, it examines contemporary Christian interpretations of stewardship, especially in relation to the environment. Emphasis on human dominion over nature is contrasted with human responsibility for earthkeeping, based on differing biblical interpretations. Next, the essay examines stewardship's significance for farming. The farmer as gardener and caretaker connects with Christian images of the steward. Conflicts over agricultural land-use practices are closely connected with Christian debates on dominion and stewardship. Finally, it examines stewardship in the context of modern industrial agriculture. It considers whether a stewardship ethic, as part of an interconnected set of values, can effectively moderate or challenge the negative impacts of industrialization in agriculture.

Contemporary Christian Interpretations of Stewardship

The term "stewardship" is commonly used in North American Christianity. In his examination of the steward as a Christian symbol, theologian Douglas John Hall points out that North American churches' historical situation of disestablishment, that is to say, their lack of financial support through government, has meant that stewardship, especially of financial resources within congregations, has been vital to survival and prosperity (Hall 1990). The common use of the term stewardship in this context means raising and managing funds to sustain the life and mission work of the church.

More recently, the concept of stewardship has been broadened beyond just financial resource management to include care for the earth. With the rise in concern about environmental issues, the significance of the symbol has been expanded and has been applied in various ways to address relations between humanity and nature from within a Christian perspective.

While stewardship has significance beyond addressing environmental problems, it is also not the only way Christians have approached these problems. Christians have taken different approaches to interpreting Christian scriptures and traditions to better address environmental concerns. An ethic of stewardship has been an important part of this theological thinking and practice, but does not have universal appeal among Christians. For example, Laurel Kearns, in her sociological research into Christian environmental action, categorizes three types of environmental response among Christians in the United States, of which a stewardship ethic is just one, alongside ethics of eco-justice and creation spirituality. The stewardship ethic, she notes, has the greatest appeal among evangelical Christians (Kearns 1996).

To call humans "stewards" means that humanity has a special role in the care, preservation, and cultivation of nature. This role elevates humans, since the position of steward is one of authority and great responsibility. At the same time it maintains a sense of humility and submission to the greater rule of God, who is understood as the true owner and ruler of creation. Often this emphasis on the important role of humans as stewards is coupled with special concern for human health and benefits that result from proper care for nature.

The scriptural basis for the model of stewardship is very important for many Christians, both theologians and laypersons, who are invested in its potential as a model for guiding Christian behavior toward the environment. As noted

above, its particular appeal among evangelicals explains some of this emphasis. As a result, much of the insider literature considers connection to and interpretations of scripture to better understand the relevance of the symbol and its potential for application to contemporary issues.

Christianity, especially in the West, has been accused of anthropocentrism, or excessive focus on the importance of humans. Most famously, this accusation came from historian Lynn White Jr. when he wrote that, "Christianity is the most anthropocentric religion the world has seen" (White 1967). This anthropocentric worldview, as White saw it, was based primarily in an understanding of humanity as created in God's image, and as being placed on earth to rule over nature, which existed for human benefit. This is the foundation of the idea of the dominion of humanity over nature, based on interpretations of especially Genesis 1:27–28, which reads, "So God created man in his own image, in the image of God created he him; male and female created he them. And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth" (KJV). For many, these verses lay out at the very beginning the special relationship between God and humanity, who are in God's image, and the special role of humanity who are given dominion over nature.

Interpretations of the special place of humanity and the extent of human control over nature implied in the concept of stewardship vary. Some argue the role of human stewardship extends globally, over all living things and habitats. For them, stewardship is best realized through human control and development of nature, emphasizing the dominion of humanity over nature.

Others have used the model of the steward in responding to White's and others' accusations that, especially in the West, dominion has been exercised excessively. They use later verses to give insight into their interpretation of the role humanity was given in these early Genesis passages and how dominion should be exercised. One such verse, often connected with the stewardship of nature, is Genesis 2:15 which reads "And the Lord God took the man, and put him into the garden of Eden to dress it and to keep it" (KJV). Writers such as theologian Loren Wilkinson and agronomist and practicing Christian Gary Fick argue that the true responsibility of Adam, who here represents humanity, is to be the gardener, the keeper, and protector of the earth (Wilkinson 1991; Fick 2008). Taking seriously the accusation that too often dominion was interpreted as domination, the use of stewardship here sees dominion not as a power given to humanity, but as a responsibility. Humans are to be good stewards of the earth, to tend and keep the earth on God's behalf. For Wilkinson, Fick, and others, a good steward is defined as a protector of creation.

Interestingly, neither steward nor stewardship is mentioned in either of these scripture passages. Instead, looking at the concept of the steward from both the Old and New Testaments, including later in Genesis, these passages are interpreted in light of their understanding of humanity's role as stewards under God's ultimate lordship.

For others, stewardship acknowledges and hopes to curtail the uncontrollable implications that human power has to disrupt nature, more than it calls on humans to exercise power as control, either in a dominion or keeping mode. As Robin Attfield, a philosopher of environment and religion, explains, "stewardship is not synonymous with interventionism, and is compatible with letting-be. . .[yet] responsibility remains possible for the entire sphere of nature which humans can affect. . . . Unless this extensive power is exercised with responsibility, global problems will be intensified. Thus the choice is between power exercised responsibly, and power without responsibility" (Attfield 2006). This is especially the case in agriculture, where human technology and practices in this field have wide-ranging effects globally.

Some, such as Hall, have gone beyond stewardship as management of either finances or human relations with nature. Hall argues that it

has far greater potential. For him, stewardship is a symbol of human (Christian) vocation in the world, emphasizing that Christians should be engaged with the well-being of the material world. In his interpretation of the symbol, Christian stewardship would encompass work toward greater social justice, greater relations between humanity and nonhuman nature, and a more peaceful world (Hall 1990). Thus, the literature reflects a fairly broad spectrum of interpretation of what stewardship can mean in terms of human power and responsibility.

Stewardship's Significance for Farming

Just as stewardship is connected with the Christian experience in North America, it is also tied with the practice of farming. The influence of Christian attitudes to nature and land use is still apparent in conflicts within agriculture today. Despite the importance of the religious roots and use of stewardship, the term is used frequently by many outside theological circles, especially in reference to farming practices, often without any overtly religious meaning intended. Stewardship in this case often means good farm management. Michael Northcott, a Christian ethicist, points out that the term, in this more limited sense, is even used by agricultural input companies as well as by agricultural regulators (Northcott 2006).

Good stewardship in farming is commonly understood to mean practices that conserve and improve the health of the soil and protect the water and species of plants and animals that the farmer depends on to produce food and fiber for the whole community. A stewardly farmer is a good manager of the resources under her or his management, ensuring healthy farmland, adequate pure water, and healthy plants and animals. A good current crop must not come at the expense of lost soil, lost fertility, or contamination of the farm ecosystem in the long run. The symbol of the steward as gardener makes sense in a farming context. Thus, many see using the symbolism of stewardship as particularly apt for approaching environmental issues related to farming practices.

Interpretations of dominion and the meaning of stewardship vary within an agricultural context as well and affect farmers' relationship with and treatment of their land. The issue of dominion is especially apparent in debates about property owners' rights. Farmers often now control large tracts of land on ever-growing farms. The implications of the practices of individual farmers on their own land, however, do not stop at their property lines and can affect those immediately surrounding the farm and also the wider ecology of the region. When taken together, common practices can have a global impact.

Frederick Kirschenmann, both a farmer and an agricultural academic, points out the sometimes-conflicting values on land use that Christians brought over into the "New World." On the one hand, they felt called to use and develop the land to its fullest potential (exercising dominion), and on the other hand, they felt called to preserve and protect the land as a place of freedom [and prosperity] for many generations (exercising stewardship). These values continue to conflict today, argues Kirschenmann, even within the same person. The contrast between these two values is sometimes expressed in the conflict between private property rights, or a sense of entitlement, and stewardship of the land, or a sense of greater responsibility to God or to future generations for the gift of land (Kirschenmann 2010).

Aldo Leopold also connected attitudes of dominion with emphasis on private property rights in his influential 1949 book *A Sand County Almanac*. Although Leopold was primarily concerned with conservation issues, much of what he has to say has relevance for agricultural issues related to the environment as well. He argued for what he called the land ethic, as a way to instill a deeper understanding of human responsibility to the wider community of soils, waters, plants, and animals, or collectively: the land (Leopold 1949). Leopold, as did White, explicitly connected attitudes of entitlement to

ideas founded in interpretations of Genesis, but in Leopold's case he critiqued the stories of Abraham. Although these ideas have Christian foundations, both argue that these attitudes now pervade Western secular culture and, in White's case, Western science and technology as well.

Stewardship is also tied to ownership of land, but in a different way. Paul Thompson, a philosopher of agricultural and environmental ethics, contends that stewardship in farming is primarily a selfishly motivated act (Thompson 1995). The farmer benefits directly from acting in a stewardly way. Farmers who own the land they farm logically have more incentive to look after their land. He or she has a greater investment in the long-term health of the soil and surrounding ecosystem, especially if the farmer has aspirations to pass the farm on to succeeding generations, as is the case with a family farm. This self-interest in the farming context moderates the sense of entitlement that also tends to accompany an understanding of private land ownership.

The public is coming to expect more from farms than just food and fiber. Farms now also produce other goods that are recognized by consumers such as environmental benefits, agritourism, and even energy production. Property rights are thus being balanced against wider social and environmental goods and the expectations of society at large.

The differences between dominion and keeping stewardship are evident within farming specifically. In his study of the use of stewardship among (especially Dutch) Christian farmers in Canada, geographer John Paterson makes a distinction between what he terms dominion stewardship and earthkeeping stewardship in farming. The differences in biblical interpretation discussed above are reflected in the emphasis of dominion stewardship on the entitlement of humanity from Genesis 1:28, while earthkeeping stewardship emphasizes the responsibility of humanity as keepers based on Genesis 2:15. Earthkeeping stewardship also gives greater emphasis to the intrinsic value of nature beyond human use and concern (Paterson 2003).

Stewardship in agriculture is primarily about sustainable use of nature. It is about managing certain areas of land and certain species of plants and animals in a way that provides a stable source of food and other benefits for humans. This can be seen as both good and bad. Farmers are primarily concerned with preservation of soil and water resources, the basis of their livelihood, while (often urban) environmentalists may be primarily concerned with preservation of wild species habitat and pristine areas for conservation. Farmers argue that agriculture makes room for the needs of human beings as part of nature, while at the same time doing so with an awareness that a balance of give and take must be maintained. Environmentalists argue for the preservation of nature based on its intrinsic value or based on the recreational and aesthetic benefits it provides in a more pristine natural state.

Thompson points out that this apparent cross-purpose is founded in the religious notions of the role of humanity and the myth of the garden. If humans are primarily seen as gardeners of all of nature, as is sometimes the case in interpretations of stewardship, then the environmentalist agenda of preserving wild nature seems anathema (Thompson 1995). On the one hand, the gardener need not garden the whole of creation, as expressed in other interpretations of the term above. Yet some suggest they may go hand in hand. James Lovelock, an independent scientist famous for his work on Gaia Theory which postulates the earth as a self-regulating system, argues that more intensive farming methods allow greater production from smaller areas of land, making it possible to "leave alone" larger areas for conservation purposes (Lovelock 2006a).

The idea or symbol of stewardship has the ability to narrow and widen like the aperture of a camera lens. Different interpretations expand or contract the privileges or responsibilities implied in the concept. Does good stewardship simply entail following the best practice recommendations of the input companies, or is it saying something much more profound about the value of all life on earth? Critics and proponents of

stewardship often have differing views on its narrowness or breadth. Proponents such as Hall see it as having a broad significance and as inhabiting important middle ground between excessive control and slothful apathy (Hall 1990). Opponents of stewardship instead accuse it of being too far toward the side of excessive control, as being too utilitarian, and not sufficiently recognizing the intrinsic value of all life.

Critics of stewardship, such as Thompson or Lovelock, tend to take more narrow interpretations of the types of demands stewardship places on the human practitioner. Thompson accuses stewardship of being excessively human-focused, saying "agricultural stewardship is entirely compatible with self-interested, anthropocentric use of nature" (Thompson 1995). Lovelock compares stewardship to imperialism, with hubris and nemesis soon to follow (Lovelock 2006b). As shown above, these accusations are a good description of interpretations of the term that emphasize human control over and development of nature. However, these criticisms do not address the full breadth given to the term by those, including Attfield, Hall, Fick, and Wilkinson (mentioned above), who use stewardship to mean earthkeeping or even a greater responsibility for the potential impact of human activity on nonhuman life.

Stewardship in the Context of Modern Industrial Agriculture

Stewardship practices face new challenges within the context of modern industrial agriculture. Some are concerned about the negative impacts of changes in farming, considering that the population of farmers is both aging and shrinking in numbers. Farms are growing bigger and bigger, as farming equipment allows one farmer to manage ever-increasing acreage, flocks, and herds (Kirschenmann 2010). Farmers must navigate storms of weather as well as of the economy and politics. Interest rates can be as devastating to farming as lack of rain in a system that now heavily relies on expensive inputs and technology. The ability, or lack thereof, to implement stewardly practices is often at least partly determined by economic factors. Sometimes even the self-serving aspect of stewardship is not enough incentive in the face of other pressures on farmers.

Although economic factors are important, writers such as White and Leopold illustrate that worldviews are also important determining factors in how farmers treat their land. White argued that Western Christian anthropocentric attitudes were and are expressed in forceful and controlling farming technology and methods (White 1967). Leopold says in the conclusion of his essay "The Land Ethic" that, "[t]he bulk of all land relations hinges on investments of time, forethought, skill, and faith rather than on investments of cash. As a land-user thinketh, so is he" (Leopold 1949). Both of these writers caution that underlying human attitudes toward the land will have far reaching effects on the treatment of it.

So long as farming methods allow farmers to maintain a direct connection with the landscape, soil, plants, and animals they farm, they can still invest time and thought into meaningful stewardship practices. It is the quality of this connection with "the land" that is important in determining the extent and effectiveness of the stewardship that can be accomplished. Through modern industrial agriculture, humanity has ever-increasing control over aspects of farming that were uncontrollable in the past. New technologies and farm efficiencies result in bigger crop yields per acre, greater dairy production per animal, and animals that fatten more quickly than ever before. As farming increases in scale and intensification, so too do the uncontrolled risks farming poses to humans and other surrounding species. With the increasing industrialization of farming, the relationships between farmers and the land change, as well as the relationships between farmers and eaters and among rural and urban communities. The wider consequences of new farming technologies may not be immediately apparent.

Some critics of industrial agriculture point in particular to the social impacts of the changing

size of farms on rural communities. Wendell Berry, an influential agrarian thinker and essayist, who is himself both a Christian and a farmer, has offered many criticisms of the effects of industrialization on agriculture and on society at large. Berry's critiques extend to both the impacts of changing technology on rural life, and also the wider social impacts this has on moral character, and on community life in general. Specialization and industrialization fundamentally change human relationships to land, work, home, and community. Losses and changes previously experienced only in urban areas have now come to the farm as well.

Industrial agriculture has also shifted the primary sources and uses of energy on the farm. Berry contrasts energy from the sun, which can be used cyclically, with energy and nutrients from fossil fuels, which must be used wastefully (Berry 1977). For Berry, the sustainability of any technology that continues to use and depend on wasteful use of limited sources of energy and nutrients is in question. Environmental concerns are too much ignored in an industrial ideal that pushes aside a large part of the human and animal population whose labor and livelihood is replaced with increasingly powerful machines. Where animals and humans can work on cyclical energy sources, returning fertility to the land, machines are dependent on petroleum not only to fuel the tractors but also to feed the soil as fertilizer.

Berry argues that an ethic of stewardship, in short, does not stand by itself. It is a value expressed alongside values for community, industriousness, and even to some degree self-sufficiency (Berry 1977). As stewardship is primarily a question of balance, it raises the issue of limits, and of the effects of size and scale, as much as of kind. It is best practiced, Berry argues, when technology and economy remain at a "human" level, allowing the farmer close enough connection and familiarity with both the land he or she farms and the community in which he or she lives to be effectively responsible to both.

Writers such as Barbara Kingsolver, a novelist and nonfiction writer, and Mark Graham, a Christian theologian and ethicist, join Berry in reflecting on the connected problems of intensification and expansion, mechanization, and diminishing rural community life. They have each looked for examples that illustrate effective alternatives that manage to keep the interconnected values mentioned above in balance. Traditional Amish and Mennonite farming communities form examples that all three look to as effective alternatives to modern agricultural methods (Berry 1987; Graham 2005; Kingsolver 2007). These communities farm with methods and technologies that still make effective use of cyclical energy sources, and they maintain the importance of community, family, hard work, as well as stewardship over the long-term. More moderate challenges to the forces of industrialization are also evident in other Christian farming communities, who also value the importance of community and stewardship, as research into Dutch-Canadian farmers in central Canada attests (Paterson 2001).

The importance of the "family farm" is related to concerns about the effects of technology and economic forces on these connected values in farming. Some in the farming community argue that farming methods that still remain at the level of management of a "family farming business" should be able to sustain the values of family, community, and stewardship. It is when farming moves to a different model of labor and capital that it fundamentally changes, and with it, the possibility for quality stewardship changes also.

One figure that has emerged as a vocal spokesperson for alternative farming methods and the importance of stewardship in farming is Joel Salatin. Made famous by Pollan's 2006 book *The Omnivore's Dilemma*, he is both a practicing farmer and inspirational speaker. He often makes connections between his religious worldviews and his particular farming and stewardship practices. Salatin's farming philosophies are an eclectic mix, which often bridge concerns shared by environmentalists and farmers, urbanites and rural people, and evangelical Christian and New Age perspectives on

environment. While clear divides exist between many of these groups, he illustrates that points of connection can be found.

Humans need to find a balanced and meaningful relationship with nature to survive and thrive into the future. Berry contrasts the technological ideal of industrial farming, (which could be extended to industry of all kinds), with the ideal of preservation environmentalists. Neither, he believes, see a meaningful role for humanity. "Neither the agricultural specialist nor the conservation specialist has any idea where people belong in the order of things. Neither can conceive of a domesticated or humane landscape. People . . . are perceived by the specialist as a kind of litter, pollutants of pure nature on the one hand, and of pure technology, total control, on the other" (Berry 1977). Writers such as Hall and Berry seek a middle ground, a meaningful place for humans in a balanced relationship with nature. What that means in practice is what is at issue.

Summary

Environmental stewardship is about the relationship between humanity and nature. Those seeking a stewardship model in agriculture see the need for healthy human culture as well as a healthy natural environment, where both can work together in meaningful and reciprocally beneficial ways. Christian stewardship in agriculture is interpreted in different ways, giving it different scope and emphasis. With connections to passages in Genesis, a stewardship view includes some notion of the human as gardener, or farmer. It is not about letting nature completely alone, nor about excessive control of nature through technology, but about meaningful and balanced relations between humans and nonhuman nature.

Cross-References

► Agriculture of the Middle
► Farmer Types and Motivation

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Christianity and Food

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Introduction

Food preparation, cooking, and eating are regulated less formally in Christianity than in other religions, such as Judaism and Islam. Although it is not always possible to identify Christian ethical rules governing specific procedures and practices, teaching and wisdom offer extensive general guidance. Key sources include scripture, tradition, and monastic rules. In this contribution, Christian teaching will first be situated in the context of the imperatives of the Old and New Testaments. The Christian preference for simple diet and preparatory methods will then be discussed, followed by the high valuation of the task of cooking in monastic rules and Christian influences on specific dietary options and recipes. Finally, the ways in which flexibility and rules have each played a part in shaping the choices of Christian diners will be considered.

The Two Testaments: Change and Continuity

In the Christian communities of the New Testament, the status of the Jewish law, received from God by Moses, was debated extensively. In this law, rules governing food preparation were prominent. This debate became heated as Paul's mission to the Gentiles began. (Gentiles were non-Jews who had not previously followed the Jewish law.) Jesus' teaching seemed to suggest that some parts of that law no longer applied or did not apply to the Gentiles (Matthew 11.25-30, 23.13-28; Mark 7.14-23; Luke 10.29-37, 18.9-14, John 1.14-18). Yet Jesus also presented himself as not abolishing the Jewish law but fulfilling it (Matthew 15.17-20, Luke 16.16-18, John 5.45-7). In view of this apparently contradictory teaching, did Gentile converts to Christianity need to observe the full requirements of the Mosaic law relating to food preparation, especially as laid down in the Old Testament books Leviticus and Deuteronomy? At the Council of Jerusalem, a compromise was reached in which all Christians were urged to abstain from food sacrificed to idols, from blood, and from the flesh of living beings killed by strangulation (Acts 15.29). Christians were therefore expected to continue some Jewish meat preparation practices. Other Jewish customs could, by implication, be discontinued, such as the requirement not to mix milk and meat (Exodus 23.19b).

Isolated attempts have been made to reinstitute aspects of the Mosaic law relating to food preparation, notably in Celtic Ireland in the seventh through ninth centuries and in other regions under the influence of Eastern Orthodox Christian missions (Grumett 2008). Yet in subsequent Christian history, even the minimal expectations articulated at the Jerusalem Council were mostly ignored. Nevertheless, a significant strand of teaching censures elaborate methods of food preparation and cooking, associating these with the sin of gluttony and urging Christians to adopt simple methods. The classic understanding of gluttony encompassed a considerably wider range of activities than is generally assumed today (Miller 1997). Gluttony was not simply, nor even primarily, the sin of consuming excessive quantities of food. As Thomas Aquinas (1962–1976) taught, gluttony included the sin of eating food that was too costly or difficult to prepare as well as the sin of eating too early or too quickly (*Summa theologiae* II.2, q. 148, a. 4, resp.).

A Simple Diet

In his fourth-century monastic teaching, Basil of Caesarea promotes a simple diet employing ingredients that are available locally. He counsels:

> We ought to choose for our own use whatever is more easily and cheaply obtained in each locality and available for common use and bring in from

> a distance only those things which are more necessary for life, such as oil and the like or if something is appropriate for the necessary relief of the sick – yet even this only if it can be obtained without fuss and disturbance and distraction. (*Longer Responses* 19)

Basil here recognizes that, in monasteries, gluttony could become an acute temptation. Although monasteries were traditionally strictly ascetic, economies of scale made it possible for their members to obtain foods and employ preparation methods unavailable to the wider populace.

Christians have promoted simplicity in cooking as well as in food sourcing and preparation, with ascetics subverting the traditional hierarchy described by Claude Lévi-Strauss (1969) that assigns cooked food a higher status than raw food (Twigg 1979, 1983). The desert fathers were noteworthy in this regard. These hermits lived apart from society in the early centuries of Christianity in order to pursue a life of prayer and self-denial. In their *Lives* (1981), the desert fathers are presented as subsisting on very small quantities of roots, leaves, herbs, pulses, seeds, and olives. In Palestine and Syria an especially strict group, known as "grazers," ate only grass, sometimes alongside wild animals. Most of these simple foods have been classed by humoral theorists like Aristotle, Galen, and Albert the Great as "cold" and "dry," in contrast with the "hot" and "moist" dishes that would typically be produced though cookery. "Hot" and "moist" dishes, especially cooked meat, were seen as warming the body and leading it into temptations, above all sexual temptations, whereas "cold" and "dry" foods, such as raw vegetables, were believed to maintain the body in a state of physical purity and spiritual discipline.

These theories were promoted by many early Christian authorities such as Jerome and Basil of Ancyra. They were revived by nineteenth-century health reformers, many of whom were prominent Christians. In 1829, Dr Sylvester Graham, the Presbyterian minister and temperance lecturer, invented the cracker biscuit that bore his name. This tasted like a digestive biscuit and had a similar consistency as well as a dryness intended to curb sexual urges. At the start of the twentieth century, the Kellogg brothers and other Christian entrepreneurs pioneered breakfast cereals and other meat substitutes such as peanut butter in order to wean Americans off their pork, beans, and pie breakfasts (Carson 1959). John Harvey Kellogg and William Keith Kellogg were Seventh Day Adventists based at the church's Battle Creek Sanatorium in Michigan. The Christian context of some breakfast products was proclaimed by their names, which included Food of Eden, Golden Manna, and even Elijah's Manna. Today breakfast remains the daily meal most deeply impacted by Christian dietary ideals, in both its generally raw ingredients and simple preparation.

Although mainstream Christianity has obviously not viewed all cooking negatively, a concern to avoid unnecessary cooking has persisted. This is well expressed by Clement of Alexandria (1993), who in his *Instructor*, written around 200, commends "simple, truly plain" food that ministers to "life, not to luxury" (ch. 2.i). Such food, he continues, is "conducive both to digestion and lightness of body, from which come growth, and health, and right strength." Clement attacks a range of elaborate food preparation methods, including pastry making, and condemns consumers of elaborate dishes as "gluttons, surrounded with the sound of hissing frying pans" who wear their "whole life away at the pestle and mortar." These comments indicate that, if raw items are edible and in sufficient supply, they should be preferred to cooked dishes.

One of Clement's complaints is against cooks who "emasculate plain food, namely bread, by straining off the nourishing part of the grain, so that the necessary part of food becomes matter of reproach to luxury." This critique of white bread re-emerged in the nineteenth-century health reform movement. Sylvester Graham, previously mentioned, regarded white bread as nutritionally deficient, promoting in its place brown bread made with his own brand of wholemeal flour, which contained coarsely ground bran and germ. By commercial means such as these, theological choices about recipes and preparation

methods made wide impact on daily life, with products marketed as part of an embodied spiritual discipline. Bodily health was widely viewed as indicative of spiritual health and even of personal salvation.

The criticisms of early Christian writers and later Christian health reformers were directed primarily against meat (Grumett and Muers 2010), which usually had to be cooked before it could be eaten. Part of the reason that cooking could historically be regarded as a superfluous activity was that levels of meat eating were generally low, certainly compared with current levels in the West. Yet beyond monastery walls, abstention from meat was not the norm at all times. Feasts marked important points in the Christian year, especially Easter and Christmas, and good cooking, including meat dishes, helped make them special. Indeed, Jesus himself cooked and ate fish after his Resurrection, in the presence of several disciples (John 21.9-13). This suggests that cooking should in principle be viewed positively, providing its results are not unnecessarily luxurious nor the preparation process needlessly time-consuming.

Cooking and Recipes

In the rules of some monastic communities, cooking is regarded as a sacred commission. In the *Rule of Benedict* (1989), composed around 540, the cellarer, who functioned similarly to a bursar, is exhorted to "look upon all the utensils of the monastery and its whole property as upon the sacred vessels of the altar" (ch. 31). This ethic of culinary care is confirmed in the eighth-century *Longer Rule for Canons* composed by Chrodegang of Metz (2005), in which the cooks are to be "selected from the most faithful members of the household of the church, and be carefully trained to their work, so that they may be capable of attending to the needs of the brethren appropriately, both by their skill at cooking and by their pure faith" (ch. 11).

This view of cooking as a sacred charge is clearest in some of the practices surrounding the manufacture of the leavened bread used in the Eucharist. In many ancient traditions this bread was required to be prepared in silence, or by priests, or while specific psalms were chanted, or while special clothing was worn (Galavaris 1970). In some places the bread had to be baked in church, in an oven provided for this purpose. In any case, the bread was expected to be of high quality, made with finely ground sifted flour, and usually had to be baked on the day on which it was offered. In his *Lausiac History* (1918), Palladius describes the hermit Candida rising at night to grind corn, light the oven, and bake the loaf for the morning Eucharist (ch. 57). The leaven, which was reserved from the previous batch of dough, was seen as testament to a church's continuing eucharistic tradition. In some churches it was even traced back to a portion associated with Jesus or one of his apostles.

The seasonal prohibitions of specific foodstuffs discussed earlier have influenced the development of recipes that remain popular today. The most important such season has been Lent, lasting about six weeks, when red meat, poultry, dairy products, and eggs were historically banned by both church and state (Henisch 1976). Pancakes and recipes involving the frying or roasting of pieces of meat are made in many countries during Shrovetide or Carnival, the period immediately before the start of Lent. Although Mothering Sunday, which falls around the middle of Lent, was a time for relaxation and family gatherings, food prohibitions nevertheless continued. To provide a suitable treat without employing any banned ingredients, dried fruit and nuts could be used with marzipan (made from almonds, the standard milk substitute), yeast, and saffron to produce simnel cake. Hot cross buns were baked on Good Friday, although after the Reformation Protestants viewed these with suspicion because of their associations with the eucharistic bread, which Catholics reserved on the previous day. Easter eggs, which originally were hardboiled decorated eggs, were exchanged at the end of Lent. This was because, once the ban on egg consumption ended, they were available in abundance.

Fish cookery has been indirectly promoted by Christian bans on the consumption of red meat

that applied across society during Lent and on regular days of abstinence such as Fridays, as well as throughout the year in most medieval monasteries (Grumett 2011). These monasteries were well known for their lavish fish cookery and frequently criticized for it by those who viewed such cookery as incompatible with the spirit of monastic simplicity. The custom of serving fish on Fridays continues today in many restaurants and refectories.

Medieval monasteries also played an important role in brewing, winemaking, and the distillation of spirits, as evidenced today by the names of many alcoholic drinks and producers. Alcohol, unlike meat, was not banned in monasteries. Although John Wesley, who founded Methodism, condemned distilled spirits, general prohibitions of alcohol under Christian influence were rare before the temperance movement of the later nineteenth century (Fuller 1996).

Eating: Flexibility, Rules, and Choices

Meals comprise a central strand of the biblical narrative about Jesus. It is notable that a meal, the Last Supper, is Jesus' final act of fellowship with his disciples. All four Gospels include an account of Jesus presiding at this meal (Matthew 26.20-9, Mark 14.17-25, Luke 22.14-38, John 13.2b-17.26). In John's account, moreover, this meal is an occasion when Jesus tells his disciples much about himself and his destiny. In Luke's Gospel, furthermore, after his Resurrection Jesus reveals himself to some of his disciples in the breaking of bread (24.30-1). (This breaking was the prerogative of the host and a standard part of any meal.) Paul provides the first account of a Christian Eucharist, presenting it as a memorial and proclamation of Jesus at which bread and wine are consumed (1 Corinthians 11.23-6).

Jesus was a guest at many meals in the course of his ministry and was frequently criticized for accepting invitations to the tables of tax collectors and sinners (e.g., Matthew 11.19). His example promotes a flexible approach to dining and is developed by Paul (Romans 14.1–15.13; 1 Corinthians 8–11.1). For the reasons discussed at the beginning of this entry, however, flexibility did not entail complete liberty. Rather, Paul taught that choices about accepting hospitality and the foods offered should be made with a view to the effects of those choices on other people, whether Christians, Jews, or Gentiles, and on the Christian mission. For instance, unrestricted consumption would likely offend potential Jewish converts, just as excessive strictness might deter Gentiles. A well-known figure from much later in Christian history, who acted similarly to Jesus, is Francis of Assisi, who in 1210 founded the Franciscan order. Although Francis' preference was to avoid meat, he was not completely vegetarian, because this would have impeded his ability to share the life of the people around him. This included being a guest at meals, at which meat would sometimes be served (Grumett 2007).

The Gospels recount many shared meals, and dining together in a single room became the norm in monastic communities, as reflected in their written rules. In the *Rules of Pachomius* (1981), composed in about 320, special care is taken to prevent eating in any other location. It is stipulated that no food be taken from the community's garden, fields, or orchard for personal consumption nor stored privately (chs 71–80). These rules applied even to windfall fruit. From then onwards, monasteries had a refectory in which meals would be taken in common and in which the dining rules were enforced. As monasteries grew larger, however, other dining areas were created in which the rules were deemed either not to apply or to apply less strictly.

At least as significant as the location in which meals were taken was the time of eating. In the fifth-century *Rule of Saint Augustine* (1984), adopted by the Dominican order, the main meal was delayed until late in the afternoon, although monks and nuns who were unable to fast for that long were permitted to take some food around midday (ch. 3.1). In the later *Rule of Benedict*, the time of the main meal, which was the first meal of the day, varied according to the season. For example, during Eastertide it was taken at midday ("the sixth hour") and followed by supper, whereas in the penitential season of Lent, it was delayed until evening (ch. 41). On most other

days it could be taken at around 3 p.m. ("the ninth hour"). The principle of delaying the first and often only meal of the day in order to fast was a standard monastic discipline, but in recent decades has found very few advocates (although see De Vogüé 1989).

In monasteries and convents, although dining was communal, speaking during meals was prohibited. Requests for food or utensils were communicated via a simple system of sign language (Ambrose 2006). At some meals, diners listened to readings from scripture or other edifying texts or to extracts from their rule. This left them free to meditate and eat their food thankfully.

Even in the relatively strict monastic dining context, a choice of dishes was permitted. The *Rule of Benedict* allowed monks to choose between "two cooked dishes, on account of individual infirmities, so that he who perchance cannot eat of the one, may make his meal of the other" (ch. 39). The *Rule of the Master* (1977), compiled shortly before that of Benedict, unusually allowed meat to be eaten at the Easter and Christmas feasts by those who wished. But this choice was presented in such a way as to discourage the meat option. The rule states:

> Let those brethren of a deanery who are going to eat meat be seated beside one another at their own tables, and let the specially cooked meat courses be brought to them in separate dishes, lest the purity of the abstainers seem to be sullied, and in order that the eaters may notice how great the distance is between them, those who cater to their desires and those who master the stomach. (ch. 53)

Moreover, the Master advises in the same chapter that, when the feast approaches, the monks be guided in their choice and encouraged to join the abstainers' table.

In the later medieval period, monastic gluttony was frequently the object of wider public critique. Interestingly, similar criticisms of conventual practice are much rarer, suggesting that nuns were more likely to observe the spirit of their rule than monks. In Geoffrey Chaucer's *Canterbury Tales*, which were written in the late fourteenth century, for example, the monk's favorite meat is roasted swan, suggestive of lavish expense as well as pride and sloth, while the summoner (a friar) enjoys garlic, onion, and leeks, which were often believed to possess aphrodisiacal properties. The good widow of the *Nun's Priest's Tale*, in contrast, lives simply, drinking no wine and eating milk and brown bread (Biebel 1998).

It is significant that the decline in monastic dietary discipline was associated with a move away from common dining in a single place at a fixed time. In the modern world, traditions of common family dining are threatened by the rapid spread of mass fast food culture (Grumett et al. 2011). Yet from the perspective of a Judeo-Christian theology of creation, food is a gift from God to humankind that is, as such, given within boundaries and with limitations (Genesis 1.29). A misplaced desire to consume food and to have food accepted by God lies at the root of the two great primordial biblical sins: the expulsion of Adam and Eve from Eden after they tasted the forbidden fruit (Genesis 3) and the murder of Abel by his brother Cain after God's rejection of the latter's vegetal offering (Genesis 4.1-16). This sinful nexus of consumption, estrangement, and annihilation contrasts starkly with the Sabbath rest into which God calls all people (Exodus 20.8-11), in which waiting and the taking of time allow lives to be shaped by principles other than consumption.

Conclusion

Although the expectations surrounding food preparation, cookery, and eating are less clearly codified in Christianity than in many other religions, traditions of practice and interpretation with ethical relevance can nonetheless be identified. These emerge from Old Testament legislation, its interpretation in light of the teaching of Jesus, and the subsequent codification of both by churches and monastic founders. The ingredients and preparation techniques employed should both be simple. For this reason, local sourcing of ingredients is desirable and foodstuffs that may be eaten raw should normally be preferred where practicable, as part of a balanced diet suitable for the individual. Moreover, particular seasons and days of abstinence are part of Christian tradition.

Preparing the dishes associated with them is one way of engaging present-day Christians with the dietary history of their faith and, via that history, with their faith's cycle of feasts and fasts, its scripture, and its doctrines.

Such principles have wider relevance. The renewal of interest in monastic wisdom and mindful practice that is evident beyond the boundaries of institutional Christianity suggests that Christian traditions of food preparation, cooking, and eating have continued relevance for wider society. Indeed, by giving such features of their religion greater prominence, Christians might demonstrate a more embodied and rooted faith that appeals to people who are currently searching for enlightenment elsewhere.

Cross-References

- ▶ Christian Ethics and Vegetarianism
- ▶ Fasting
- ▶ Gluttony

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Civic Agriculture

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Synonyms

Agricultural social entrepreneurs; Alternative food networks; Embeddedness; Local food systems; Public goods in agriculture

Introduction

Civic agriculture is a term used to describe several alternative forms of farm-based entrepreneurship which emphasize the embeddedness of agricultural activity in local communities. Embedded local agriculture is characterized by direct linkages between producers and consumers, thus forging tighter relationships in communities and creating a multiplier effect in local economies. Civic agriculture emerged as a discursive frame in rural sociology, geography, and development studies with the publication of a series of articles and texts by Thomas Lyson and others in the late 1990s and early 2000s (Lyson 2000). Civic agriculture developed among other theoretical and descriptive frames, such as alternative food networks, as a response to the relative lack of attention given to how and why small-scale producers persisted through the agricultural restricting in the United States in the 1970s and 1980s. Lyson (2004) writes that civic agriculture is thought to "fill the geographic and economic spaces that have been passed over or ignored by large-scale industrial producers" (61).

The proliferation of local food systems in the past several decades constitutes key points of diversity and resistance in the agricultural economy that, according to "civic agriculture" explanations, signals a shift toward a more public agriculture. While diverse, these socioeconomic activities in agriculture have in common, according to Lyson (2004), the potential to "nurture local economic development, maintain diversity and quality in products and provide forums where producers and consumers can come together to solidify bonds of community" (p. 87). In what follows, this entry will provide some elaboration of the key principles and concepts of civic agriculture. Of particular interest to scholars studying civic agriculture are the ideas of embeddedness, public goods, and community development. The entry will conclude with capturing some of the debates around justice, gender, and postcapitalist politics that are often overlooked in theories of civic agriculture.

Civic Agriculture

Conventional, industrial-scale agriculture produces cheap food and fungible commodities as well as well-documented social, economic, and environmental problems. Consumers of conventional foods are generally separated socially and geographically from the places of food and commodity production, keeping them ignorant of and disconnected from production practices. Civic agriculture is characterized by complementary social and economic strategies that are intended to provide economic benefits to farmers as well as socio-environmental benefits to the community. These benefits can include cleaner water through reduced chemical use, fresher food through direct marketing, and closer relations between producers and consumers through short supply chains. Through cultivating a sense of loyalty to agriculture's limits and capacities in a particular place, civic agriculture aims to develop a kind of "food citizenship" (Lyson 2005).

Civic agriculture differs from other technical innovations in agriculture emerging around the same time, such as certified organic production, in the way that issues of social welfare are emphasized. Technical practices often overlook, or are not designed to accommodate the social dimensions of equity in the food system. The advocates for social welfare in the food system call for the long-term maintenance of farming livelihoods, the provision of quality food and nutrition to individuals regardless of socioeconomic status, and the distribution of public goods (i.e., clean water or living wages) throughout a community. Lyson (2004) suggests that a more "civic" agriculture draws on notions of economy that incorporate social relations, cultural and environmental history, and local politics into agricultural production and distribution. Small-scale farmers aim to increase "community capital" by contributing directly to the local economy and to the social and physical health of local residents. The civic agriculture approach highlights the "problem-solving capacity" (Lyson 2004, p. 63) of locally organized food systems, which are "characterized by networks of producers who are bound together by place" (Lyson 2005, p. 92).

Lyson (2004) developed his theory of civic agriculture by examining in detail several studies on small businesses commissioned by the Congress in 1946. These studies, conducted by sociologists Mills and Ulmer and anthropologist Goldschmidt, compared communities on the basis of well-being related to the presence or absence of small-scale businesses and large-scale agriculture, respectively. They found that communities with more small businesses and small-scale farms scored higher on quality of life measures. While the results of these studies did not change the trajectory of American agriculture and rural communities at the time, Lyson uses them to articulate the characteristics of the small-scale business enterprises that survived the modernization of agriculture. They are summarized as follows: (1) selling in local markets, (2) integrating agriculture into the community, (3) producing value-added and quality products, (4) staying small-scale and land- and labor-intensive, (5) using site-specific knowledge, and (6) maintaining short supply chains.

The benefits to community welfare are clearly greater than the sum of these characteristic parts, as any given small business could diminish public health or degrade the environment with its practices. Civic agriculture thus distinguishes itself not just in its scale, scope, or supply chain but in what Lyson (2004) identified as contributing to the "problem-solving capacity" of communities. By this he refers to the inclusion of community welfare as a factor in business decision-making, rather than simply pursuing profit at the expense of social welfare. By promoting a wider community welfare, "food citizens" participate in activities that contribute socio-ecological benefits (Wilkins 2004, p. 269). The characteristics of activities that make these kinds of contributions are threefold. The first of these characteristics is their embeddedness in local communities, the second is the production of public goods in addition to the production of farm products, and the third is the facilitation of community economic development.

Embeddedness

Civic agriculture, as an alternative form of entrepreneurship, emphasizes local food systems as a livelihood strategy. These are locality-based markets established through direct sales to consumers. Examples include community gardens, farmer's markets, community-supported agriculture (CSA), box schemes, and preordered and bulk meat purchases, among many other innovative production and distribution strategies (Lyson 2004). These strategies are designed to promote community social and economic development in ways that commodity agriculture, which participates in global-scale markets, does not (Lyson and Guptill 2004). Civic agriculture accomplishes this through economic short supply chains premised on trust, transparency, and reciprocity. Because of the multiplier effect of local economies, the kinds of enterprises that are most likely to promote economic development are those that connect producers and consumers through direct marketing or locality-based food processing and procurement.

Public Goods

According to Wright (2006), civic agriculture "exists *between* market and society" (p. 226, emphasis in original) and incorporates social welfare into its bottom line. As such, civic agriculture lends itself well to the embedding of social needs into economic activities of localities (DeLind 2002). In other words, civic agriculture connects farming and its benefits to a place and its residents, rather than externalizing them. For example, in Trauger et al. (2010), women farmers in Pennsylvania used the farm as a site to produce food, but also to meet social needs, such as safe after-school spaces for rural at-risk youth or as a site for the production and processing of Halal meat for immigrants in the community. Most farmers in the study also provided public education through direct physical engagement with the practice of farming. This is part of what DeLind (2002) calls civic agriculture's "purposeful and enlightening public obligation" (p. 219).

Community Development

Civic agricultural enterprises contribute to community public goods by promoting "agricultural literacy" through cultivating place-specific knowledges (DeLind 2002). For example, Saldivar-Tanaka and Krasny (2004) suggest that

urban gardens in Latino communities function as critical sites of education, empowerment, and community participation. They identify the garden as a "participatory landscape" which provides critical connections to heritages lost through immigration, and this function is perhaps more important than its role as a site of food production. Another way civic agriculture promotes community development (and meets social needs) is through farm-to-school (FTS) initiatives, which are increasing in popularity in many urban and some rural communities. The high obesity rate among youth is an increasingly prevalent problem, and the poor food environments of public schools are implicated in this trend. Bagdonis et al. (2009) studied FTS projects in Pennsylvania to determine whether and how the community problem-solving dimensions of civic agriculture can contribute to successful FTS programs.

Civic Agriculture Debates

In positioning civic agriculture in opposition to (or at least the opposite of) industrial agriculture, theories of civic agriculture establish an unhelpful binary, in which civic agriculture is good and industrial agriculture is bad. Thus, a central criticism of civic agriculture revolves around the way certain aspects of it have been idealized. A common criticism of civic agriculture is the way it normalizes market relations and overlooks the inequities inherent to capitalism. Thus, justice issues rise to the fore in criticism of civic agriculture, especially with regard to the social, economic, and geographic marginalization that many farmers face. Related to this, civic agriculture also normalizes the social relations at the household scale in small-scale family farming models. Research investigating gender relations in civic agriculture indicates that family farming may not be the only avenue toward producing public goods via agriculture.

Market Relations

DeLind (2002) cautions against conflating local agriculture with a universal public good, especially considering that production and consumption of local food still contribute to capitalist social relations. Hinrichs (2007) distinguishes between approaches that emphasize opposition and "defensive localism" and those that emphasize "civic renewal and redemocratization" (p. 6). Similarly, DeLind argues that (2002) local food systems cannot simply pursue alternative marketing strategies to be civic. In her view, civic agriculture must be "embodied" or material and explicitly "public" or collective. DeLind (2006) argues that agricultural activity in public spaces can foster "soil citizenship" where community members can have a stake and role in meeting social needs through agriculture. The material benefits and consequences of civic agriculture are a product of the physical work of farmers and material exchanges between farmers and consumers. As such, simply buying and selling food in a local market is not enough. A mutual stake in the risks and costs of production, through, for example, a work share in a CSA, is required for agriculture to be truly "civic." Given this criticism, theories of civic agriculture may need to incorporate some of the discourse of food sovereignty into its framework, which explicitly call for the transformation of social relations.

Justice Issues

Simply connecting producers to consumers in direct marketing relationships does not automatically create a wider public good, and many are concerned about the implications of equating production and consumption with citizenship. Hinrichs (2000) points out that power and privilege are not evenly distributed in the locality-based food systems and there are power- and class-based inequities in local food systems between consumers and producers. Brodt et al. (2006) further suggest that while some farmers are actively engaged in community development, many sustainable and conventional farmers are socially and geographically marginalized in their communities. Thus, civic agriculture needs to consider the implications of suggesting that all industrial-scale businesses do not contribute to a wider public good and perhaps expand or revise the definition of civic agriculture to more

accurately capture the unique contributions of some small-scale businesses. It is also necessary to consider that relatively less affluent and time-poor small-scale producers may have their own quality of life decreased in the pursuit of the public good for others.

Gender Relations

Many of the institutions promoting agriculture continue to adhere to the agrarian ideal of family farming, which assumes rather rigid gendered divisions of labor and decision-making on the farm. Thus, many farm women identify themselves, and others commonly associate them, with social reproductive (versus economically productive) roles. Civic agriculture, according to Lyson (2004), is also similarly laudatory of small-scale family-based business models without paying any explicit attention to gender or the roles of women. Research on civic agriculture models, however, suggests that women farmers, when the sole operator or business partner in a farming operation, tend to support and develop enterprises exhibiting civic agriculture characteristics (Trauger et al. 2010). This research shows that the marginalization that women farmers face and their socialization into caregiving roles in rural communities may actually contribute to their community conscience and desire to contribute to the problem-solving capacities of their community. Thus, theories of civic agriculture need to take into account the household-scale dynamics of the kinds of small farm business it tends to promote.

Future Research Directions

While civic agriculture narratives are clear in their criticism and the discursive construction of solutions to the problems in local food systems, less clear in these accounts are the actual processes required to create interdependence within communities and generate public goods through agriculture. A problem with theories of civic agriculture lies in identifying the specific mechanisms through which these benefits can be produced, and how characteristics of the farmers themselves (such as gender) can condition the production of benefits. Additionally, civic agriculture tends to see state or capital as driving problems in the food system, either through federal policy or global markets or some combination of the two. Thus, productive new arenas for research on civic agriculture may incorporate contributions from political and social theory to understand citizenship, political economy, and sovereignty.

Citizenship

If civic agriculture is fundamental (however problematic) about public goods, community development, and citizenship in rural communities, then it stands to reason that understanding how and where small business owners and consumers contribute to democracy is a productive research direction for civic agriculture. The kinds of citizenship identified and advocated by theories of civic agriculture require analysis (as opposed to description) of the political imaginaries that constitute its "food citizens." Citizenship is coproduced through the repeated performances of individuals and communities across space and time, and citizenship itself is a mutable and potentially subversive category. While we understand that alternative forms of belonging and allegiance operate in civic agriculture, less well understood are the ways these citizenship forms work in liberal democracies; the implications of food citizenship for national citizenship (and vice versa); and how, when, and where these political imaginaries and subjects are created.

Political Economy

Market relations are implicit in many of the forms of civic agriculture identified by its theorists and practitioners. While there is widespread public agreement on the purported benefits of small businesses to communities, theories of civic agriculture fail to identify whether and how local food systems do or do not transform the inequities of capitalist social relations in rural communities. Additionally, many of the methods of practicing civic agriculture involve either modified capitalist relations (i.e., CSAs) or the decommodification of food (community gardens), and are not small businesses at all. What role do these

transformations of social relations play in civic agriculture, and might they be more productive of public goods that small businesses? Trauger and Passidomo (2012) identify "postcapitalist politics" in local food systems as central to promoting civic agriculture enterprises and, as such, constitute a productive framework for future research.

Food Sovereignty

Civic agriculture takes issue with both the state in its policies and the market for its global reach. At the same time, civic agriculture appeals to the market to redress social inequities in rural communities. Political theorists suggest that the state and market are not easily extricated and that appeals to the state or the market for solutions must contend with both. Food sovereignty as a set of spatial and territorial strategies to contest state and capital control of food and agriculture, and promote democracy and autonomy in the gaps that exist in state/capital sovereignty, rejects state or market solutions and appeals to direct action instead. Community-based agriculture on squatted land; community distribution centers; seed-saving collectives; non-commodified food exchanges; and/or food production, consumption, and distribution practices that fall outside juridical structures all contribute to civic agriculture's aims, but also challenge its central assertions about small businesses. Food sovereignty may thus produce some helpful allies to civic agriculture, but may also shift its core definition to include direct action and non-commodified food exchanges. Research on the relationship between food sovereignty and civic agriculture thus constitutes an emerging area of inquiry.

Summary

Civic agriculture is a term used to capture entrepreneurial activity on farms that is designed to foster community development, economically embedded activity, and public goods. Local food systems are central to civic agriculture's descriptions of a future of agriculture in what community and social needs are taken into account. Research on civic agriculture has shown how community-scale partnerships, such as farm-to-school initiatives, could contribute to economically viable farming enterprises as well as public goods such as better food environments in schools. However, critics are concerned about the centrality of market relations to civic agriculture and question the assumption that consumption equals citizenship or that small businesses generate equity. Future research directions may include revisiting the theory of civic agriculture to accommodate non-market relations as well as broader social justice issues in rural and urban communities.

Cross-References

- ▶ Agricultural Ethics
- ▶ Economy of Agriculture and Food
- ▶ Farms: Small Versus Large
- ▶ Food and Place
- ▶ Local and Regional Food Systems
- ▶ Public Institutional Foodservice
- ▶ Slow Food
- ▶ Sustainability of Food Production and Consumption
- ▶ Urban Agriculture

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Climate Change, Ethics, and Food Production

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Synonyms

Global warming; Greenhouse emissions

Introduction: Wicked Problems

There has been much public debate about the reality and about the human responsibility for the greenhouse gases that cause global warming and about obligations to those worst affected, as well as to future generations. Scientists overwhelmingly concur in accepting the evidence for these, although they may differ about the speed and extent of developments.

Donald Brown (Associate Professor of Environmental Ethics, Science, and Law at Penn State University) argued in July 2010 that:

(a) Climate change must be understood as an ethical problem, a fact that requires that scientific uncertainties about climate change be approached in a precautionary manner by those who are tempted to use scientific uncertainty as an excuse for putting others at risk.
(b) The consensus position on climate change science is entitled to respect, despite some scientific uncertainty about the timing and magnitude of climate change impacts.

As evidenced elsewhere in this volume, there is a long history of analysis and of discussion about the ethics of food, its production and distribution, and their impact on society and nature. Recently there has developed a growing body of discussion and analysis of the ethics of climate change (Bell 2010). There has, however, been relatively little focus, so far, on the ethical implications of the specific impact of climate change on food or of food production on climate change.

Climate change has been described as a "wicked problem," complex, uncertain, and contradictory in its impacts and in its practical and ethical imperatives. All people are both responsible and vulnerable, although to varying degrees, and the cooperative action of all (despite conflicting interests and rights) both locally and globally will be needed to confront the threats, including those to food production and prices, and the danger of spreading hunger.

Climate Change

Warming

The IPCC (International Panel on Climate Change) fourth report stated in 2007 that the anthropogenic (caused by humans) warming of the climate system was "unequivocal." The first decade of the new century now ranks as the

hottest decade globally on record, with a further rise of up to 0.19° since 1995, according to the British Meteorological Office, using monthly measurements from over 3,000 weather stations around the world. Pittock (2009) demonstrates that this warming (unlike that in earlier historical periods) is not due to natural changes, such as in solar activity, sunspots, etc. Plants, animals, birds, and butterflies have been responding to changes in climate zones and seasonal dates, progressively moving their habitats and breeding grounds towards the poles, since the mid-twentieth century.

There is clear evidence that climate change has already been speeding up. The Australian CSIRO (Commonwealth Scientific and Industrial Research Organisation) *State of the Climate* report in March 2012 noted that each decade since the 1950s had been warmer than the previous one, with most of the heat concentrated in the oceans. Thermal expansion had caused global sea levels to rise 210 mm above the level of the 1880s, growing almost twice as fast between 1993 and 2011 than during the entire twentieth century. Evidence from satellites indicated that Arctic ice was melting faster in 2011 than the record-breaking speed of 2010, adding to the rising sea levels. The researchers had no doubt that this was caused by anthropogenic global warming and not by any natural weather variability. Such rates indicate the Arctic could be ice-free in summer well before mid-century, 40 years earlier than had been anticipated by the IPCC in their 2007 report. In August 2011 a crew was able to row a boat, for the first time, through clear water to the magnetic North Pole.

When unusually cold and wet weather in the northern winters of 2011 and 2012 spread public doubts about global warming, scientists were able to demonstrate how changing deep ocean currents and polar winds, linked to the rapid melting of Arctic sea ice, had produced a localized regional cooling despite continuing overall warming.

Rising Greenhouse Gases

Much is known with confidence by climate scientists about the mechanism, first proposed in 1822 by Fourier and quantified in 1898 by Arrhenius, which links increasing anthropogenic greenhouse gases in the atmosphere to global warming. In January 2006 a British Antarctic survey, analyzing CO_2 (carbon dioxide) in air bubbles in crevasse ice in the peninsula, reported it had found that recent levels were higher than any in the previous 800,000 years. The speed of the recent rise, from 280 parts per million (ppm) before the industrial revolution to a provisional estimate of 393 in 2012, is unprecedented. Measurements carried out annually since 1958, in the unpolluted atmosphere at Mauna Loa, show the rise has accelerated, from 1 % a year in the 1980s to around 3 % by the end of the "noughties," as energy use in developed and developing countries continues to rise. The *State of the Climate* report estimated that global carbon dioxide emissions grew by 5.9 % during the 12 months of 2009–2010, drastically reversing the small decline of the previous year.

Growing Scientific Consensus

As a result of the accumulating data and confidence of climate science since the 1980s, there has been a growing world scientific consensus about the reality of global warming, its likely human causes and long-term risks, and, more recently and hesitantly, about its current impacts. While in 1995 most scientists surveyed (other than specialist climate scientists) believed the effects of global warming were still far away, a decade later only a few doubted they were already becoming manifest.

In July 2005 the heads of 11 influential national science academies (Brazil, Canada, China, France, Germany, India, Italy, Japan, Russia, the UK, and the USA) wrote to the G8 leaders warning that global climate change was "a clear and increasing threat" and that they must act immediately. They outlined strong and long-term evidence from direct measurements of increasing ocean and air temperatures and from rising average global sea levels, retreating glaciers and changes to many physical and biological systems.

Despite the failure of the global conference in Copenhagen in 2009 to agree action on climate

change, a new push by sceptics and a public opinion distracted by problems in the global economy, no decline in concern has occurred among scientists themselves. Delegates from 62 academies to the April 2010 meeting of the Inter-Academy Panel – the global network of the world's science academies – were asked what global issues concerned them most, "looking ahead to 2020." By a substantial margin, climate change ranked first among scientists from both rich and poor countries. In May 2010 a letter signed by 284 members of the US National Academy of Sciences was published in *Science* (DOI: 10.1126/science.328.5979.689) claiming that:

> There is compelling, comprehensive and consistent objective evidence that humans are changing the climate in ways that threaten our societies and the ecosystems on which we depend. (pp. 689–690)

A study by Stanford University, published in *Proceedings of the National Academy of Sciences* in June 2010, surveyed the top 100 climate researchers in the world and found that 97 % of them agreed with the IPCC's 2007 assessment of the reality and human causation of climate change.

Climate Change and Ethics

Attribution of Blame

This is not straightforward. All emissions travel right round the world so there is no direct relationship between the location of cause and of effect. Developed countries are responsible for by far the most greenhouse gases accumulated in the atmosphere, but China has now become the largest emitter in total and with fastest increase (though still with much lower levels per capita). Other large developing countries such as India and Brazil are catching up through rising energy use and meat consumption and deforestation. Deforestation is propelling Indonesia to the top emitting ranks, and rice production in flooded Asian paddy fields creates methane. On the other hand, the footprint of Britain's imported food is surely their responsibility, and while Australia's small population is not directly responsible for much greenhouse gas, the country benefits from being one of the largest exporters of coal (and also of beef) in the world.

Nature knows neither malice nor justice. Impoverished Bangladesh and Nepal are particularly vulnerable to rising seas or melting ice, although they have contributed little to the cause, but London and New York could in the future also be flooded, and if the Gulf Stream ever fails, it is rich north European countries that will suffer, reverting to cold temperatures like those of the same latitude in northern Canada.

Short-Term and Long-Term Ethical Priorities

There is a human obligation to offer immediate help to victims of disaster and poverty and also a responsibility in justice to offer timely assistance and refuge, and perhaps also compensation, to those struck by the results of our collective actions. On the other hand, long-term issues of intergenerational justice also call for major costly mitigation measures to slow and halt, or even reverse our greenhouse emissions, even if their impact will occur to people unknown, in a distant future. In these choices, effectiveness may conflict with the equity claims of today. The rights as well as the short-term interests of ourselves and our children may conflict with the needs of many future generations or the survival of other species.

The need for immediate mitigation cannot be ignored. There is considerable uncertainty in the projections and scenarios, but many climate scientists believe the IPCC is underestimating the window of time still available for remedial action. Some climate scientists have estimated that effects might move up smoothly as temperatures rise by 3–4°. Beyond that it could shift rapidly to 7° and more, with irreversible catastrophic consequences.

The unpredictable dangers of sudden irreversible tipping points mean that mitigation may soon be too late. As oceans absorb CO_2, they become more acidic, and this reduces their future ability to absorb more. As ice melts the exposed dark surface ceases to reflect back the sun's rays into space and the newly exposed frozen methane evaporates from the tundra. As temperature rises, forests burn and release their carbon.

Such effects are particularly hard to quantify or predict and have not been factored into IPCC assessments of what constitutes a dangerous level of greenhouse gas or of temperature.

Food, Climate Change, and Ethics

Threats to Food Production from Climate Change

Demographers are projecting a human population of nine billion by 2050, while dramatic changes in ocean and atmospheric currents, precipitation, and temperatures would significantly worsen the opportunities for feeding them all, even on the most optimistic scenarios.

Shifting climate zones, ecosystems, and weather patterns are already manifest and will increase. There is a potential loss of melt water from the Andes and the Himalayas to rivers essential for food production for many millions in South America and in China, while droughts in East Africa may threaten the sources of the Nile. There is evidence that some of the world's major underground aquifers are becoming exhausted (*New Scientist*). Salination from rising seas is already evident in Bangladesh and Pacific Islands. Floods elsewhere, such as the record-breaking rains covering much of southeast Australia in March 2012, cannot be simply redistributed to areas lacking rain.

Ocean acidification is threatening fish stocks. Canadian scientists reported in *Nature*, in July 2011, a strong link between higher sea surface temperatures and a major decline, since 1950, of around 40 %, in phytoplankton which forms the basis of the marine food chain.

IFPRI (International Food Policy Research Institute) argues that the successes of the green revolution of the 1960s led to complacency and declining investment in agricultural productivity. Although numbers of hungry and malnourished in the world declined until the 1990s, they have again started to rise, and to feed the projected world population, a new wave of innovation and investment is needed.

IFPRI models show the negative effects of climate change by 2050, under IPCC, NCAR (National Centre for Atmospheric Research), and CSIRO scenarios for temperature, evaporation, and precipitation, unless dramatic action is taken. With expected global average temperature rises by then of about 1C, yields in developing countries would decline for the most important crops especially for irrigated crops in South Asia. Price increases would affect rice, wheat, maize, and soybeans with higher feed prices for meat. Calorie availability in 2050 would decline relative to 2000 level throughout the developing world, increasing child malnutrition by 20 % relative to a world with no climate change (2009, 2010).

David Lobell reported in *Nature,* in March 2011, on trials showing African maize yields were particularly sensitive to the number of very hot days, which had been increasing faster than average temperatures. He predicted a rise of 1C would reduce yields across two thirds of the maize-growing region of Africa, with losses of 20 % or more by mid-century.

IFPRI thinks such changes might conceivably be offset and made "manageable" by well-designed investments in land and water productivity. However, after mid-century, the climate change challenges to food and water would become much more severe, with global average temperature rises between 2° and 4°. "Starting the process of slowing emissions growth today is critical to avoiding a calamitous post-2050 future" (IFPRI 2010, pp. xx, xxi).

Climate extremes producing disasters such as floods, storms, droughts, and heat waves that can impact heavily on global food production and prices have become more common over the last half century. Some scientists are beginning to demonstrate that anthropogenic greenhouse emissions have contributed significantly to the frequency and intensity of specific disasters such as the Russian heat wave and drought of 2010. This led to an embargo on food exports which played some part in the global rise in food prices, which in turn was one of the causes of the "Arab Spring" revolts. Similar attribution is being claimed for the return of drought to east Africa in 2012.

Increasingly sophisticated model projections indicate these dangers will inevitably grow

significantly by mid-century, as many greenhouse gas concentrations are already "locked in" to the atmosphere and deep oceans, and will dissipate only over centuries and millennia. These will cumulate further as humans continue to emit. The mechanisms are well understood. Nonetheless, the high degree of natural variability, the difficulty of disentangling multiple complex natural and human causes, and the limited long-term data for rare extremes have made most scientists hesitate to predict or attribute causation for specific, already manifest, disasters. However, detailed case studies are beginning to trace such a direct causal chain from human actions to harm already done.

Threats to Climate from Food Production

In 2009 the Carbon Footprint of Nations index, by the Norwegian Institute of Science and Technology, calculated that all food production contributed 20 % of global greenhouse gas emissions from goods consumed. This included, among other sources, the carbon dioxide emitted by fuel, the nitrous oxide that is emitted by manure, and fertilizers and the methane produced by decaying vegetation in flooded rice paddies and most important by the belching of ruminant animals such as cattle and sheep (both grain and grass fed). Methane and nitrous oxide are far more powerful greenhouse gasses (measured in CO_2 equivalents) than carbon dioxide, although they decay more rapidly. Rising world consumption of beef is one of the most important accelerators of climate change.

Ethical Responses

There are many alternative approaches to mitigating the dangers of climate change and preparing to adapt to its consequences. All have winners and losers and associated costs and must accept a substantial level of uncertainty. There is no simple factual calculation nor ethical Ariadne thread to guide us through this labyrinth. A simple economic cost-benefit analysis will not be appropriate because such analysis always discounts the future and cannot take into account our long-term obligations to our descendants and to the diversity of life on earth. Ethical first principles will often also need to be compromised. The global nature of the causes, vulnerabilities, and actors mandates choices that evoke trust in their fairness and further cooperative rather than confrontational approaches.

Choices and Policies

The Case of Biofuels

The production of biofuels, using as feedstock mainly maize in the USA, sugar cane in Brazil, and palm oil in Asia, was initially fostered by government subsidies and quotas in order to advance national energy self-sufficiency and farming interests. Their production has been growing rapidly over the first decade of the century. Maize ethanol produced in the USA went up from 175 m gallons in 1980 to 9 bn in 2008, about half of the global total. Biofuels have been increasingly presented as also a readily available and economically viable alternative to fossil fuels and, as such, now claim the moral high ground, despite their encroachment on agricultural and rain forest land.

Biofuels have been blamed for between 5 % and 30 % of the spike in global food prices in 2008, as well as their recurrence in 2010. Researchers have pointed to other factors including poor harvests, perhaps due themselves to climate change, low stocks, and especially to the explosion of global speculation leading to bubbles in food and oil commodity futures. There is little doubt, however, that the growth in biofuel cultivation made some contribution and that if this were expanded to meet future decarbonization targets, its effect on food supplies and prices could be substantial, hurting worst the poor around the world.

Does this then have to be a choice between immediate concerns about exacerbating world hunger and long-term ethical imperatives to protect future generations from climate change? If so, then surely immediate life sustaining food production might have a strong claim to priority. The global rise in food prices was one element in provoking riots and revolts in many countries. An expanded pragmatism would indicate the need to

avoid mitigation policies that could undermine any global unity of purpose in the face of climate change. On the other hand, if biofuels on arable land were indeed indispensable to mitigation, then the ethical dilemma might become unresolvable.

There are, furthermore, many important empirical questions. On the one hand, some maintain that current global food shortages are only due to maldistribution, waste, and inefficiency or to the diversion of crops to animal feed for growing meat consumption in wealthy and developing countries. Enough food they say could be produced on less land with improved cultivation or genetic engineering.

On the other hand, it is suggested that biofuel cultivation is itself responsible for significant greenhouse emissions, through forest clearances and the annual burning of cane fields. Recent satellite images showed that the latter is much more extensive than previously accounted for. It has been estimated that most biofuels used on UK roads do not meet environmental standards for water use, soil protection, or carbon emissions. A European commission study has found that when everything is calculated, many biofuels are as bad as crude oil; indeed palm, soya and rapeseed oil were worse. The most substantial advantage was for second-generation (2G) non-land-using ethanol and biodiesel. Such "win-win" fuels that do not compete with food production are in the pipeline, using feedstock based on saltwater algae or on desert jatropha and agave plants or on crop waste and biomass.

Arizona State University researchers say commercial algae farms are much more productive than cultivation for ethanol on arable land. All US biofuels could be replaced by algae oil on 800,000 ha of desert, allowing 16 million hectares of cropland to be planted with food, although considerable investment in pipelines would be needed. Major airlines and shipping companies are investigating a switch (Guardian Weekly).

It is claimed measures to shift government support to these alternatives could help mitigation without damaging food supplies and prices.

Changing Agricultural Practices

Agroforestry, as one example, is a natural resource management system that combines woody perennials with herbaceous crops and/or animals, either in some form of spatial arrangement or temporal sequence on the same land. It thus combines elements of both agriculture and forestry, producing increased overall yield, better water quality, optimization of capture and use of scarce rainwater, and improved habitat for both humans and wildlife, and it can improve soil biota and fertility. In more recent times, agroforestry has been being considered as one of the strategies towards climate change adaptation. In 2006 the International Food Policy Research Institute calculated that it could sequester five times more carbon from the atmosphere than ordinary croplands. They estimated that by the year 2040, agroforestry farms could sequester nearly 600 million metric tons of carbon globally compared with about 120 million metric tons for cropland (Tolentino et al. 2010).

Another proposal seeks to learn from what is being discovered about the making and use of biochar, or *terra preta*, over wide areas of the Amazon basin, for thousands of years, by pre-Colombian farmers. The carbon extracted from the atmosphere by plants normally returns there again. However, with biochar, a sealed nonpolluting pyrolysis converts plant and other organic waste, including straw, into a nonbiodegradable charcoal that can remain permanently in the soil, adding significantly to its fertility. The Australian CSIRO thinks the idea is promising but in need of more research on its suitability for different kinds of soil, on how much carbon might be removed, and on how much waste it could reprocess. A number of pilot projects are in the pipeline (Flannery 2010).

Changing Consumer Choices

Individual consumers are unlikely to have the relevant knowledge or power to affect fuel and food production methods. There are, however, also some relatively easy individual decisions about the food humans eat that may have immediate and far-reaching impacts.

The United Nations FAO (Food and Agriculture Organization) reported in 2006 that livestock generated 18 % of global greenhouse gas equivalents (including CO_2, methane, and nitrous oxide), which was more than the transport sector. As global population increased and major developing countries became richer, global meat and milk production was projected to double by 2050. A US study found reducing "food miles," by choosing only local products, would have far less impact on emissions than even a relatively small dietary shift away from red meat and dairy foods. The Garnaut report estimated that while beef contributes more than half of all global warming from agriculture, poultry contributed only 1 %.

It is unlikely that many could be persuaded to adopt a vegan diet, but slight changes in ordinary food selections could have significant impact. If many people decided to choose egg and bacon for breakfast, more often than beef sausages, fish and chips or chicken nuggets for lunch more often than beef hamburgers, and substituted roast chicken or turkey for roast lamb or beef on Sundays, the impact on greenhouse gases could be substantial. Ruminant meats could be kept as a treat for special occasions. Such choices would have the dual benefit of reducing greenhouse gases and increasing global food production.

Other Ethical Debates

There are many other long-established ethical questions linked to the production, distribution, and consumption of food, where climate change exacerbates or complicates the issue. Some of these are discussed at greater length in other sections of this encyclopedia. Sometimes one or indeed both sides in longstanding debates can find new arguments in the need for climate change mitigation or help in adapting to its impacts.

Large hydroelectric projects, long contested for their effect on wilderness and on local people, find additional positive arguments in providing clean energy for developing countries in Asia, South America, and Africa. They can also, however, sometimes severely affect water flows downstream, exacerbating impacts from climate change on agriculture and fishing. It is claimed lakes on the lower reaches of the Yangtse are already drying out, threatening a dust bowl, because the Three Gorges dam blocks the water flow. Droughts and the drying up of glaciers may also interfere with the generation of hydroelectricity.

There are longstanding debates between supporters of local community autonomy and of unimpeded national or global markets. Advocates of *locavore* practices (eating local produce) in Europe have long been in conflict with opponents of subsidies and tariffs that can exclude farmers in poor African countries from global markets. The new argument about the damage caused by the transport emissions of "food miles" is countered by those who point to how trade in food reduces waste and how agriculture in sunnier climates has a smaller carbon footprint.

Research and investment are already ongoing into much-needed drought-resistant, more productive seeds that need less water and nitrogen fertilizer, but they confront opposition to genetic modification and to exclusive corporate patents. China is engaged in selective breeding of "green super rice" which is claimed to produce more grain as well as being more resistant to droughts, floods, salty water, insects, and disease. It is not clear to whom or at what price these might be made available.

Oliver de Schutter, the UN special rapporteur on the right to food, has highlighted the crucial importance of empowering small farmers. He questioned whether the classic green revolution prescriptions of the 1970s, involving improved seeds, chemical fertilizers, and pesticides, were viable in a world running out of fossil fuel energies and in which control over these inputs was in the hands of a few very large corporations. Both sides of this debate are extensively canvassed in special editions of *Cosmos* and *IJSIF*.

Summary

Given the scale and urgency of the need both for food and for climate mitigation, strong ethical cases might be made for priority to be given to

measures that take account of current needs and rights, on the one hand, but also, on the other, for those most effective for the long term. An accommodation through expanded pragmatism must be sought, with substantial investment and research into measures that can begin to reconcile both needs.

The precautionary principal enjoins us to tread warily and to avoid action if significant harm from it is possible, even if not certain. It has been argued as appropriate for novel human interventions in nature, such as gene technology. Unfortunately it is now too late to be of much help in mitigating climate risks. The human interventions that initiated the buildup of greenhouse gases commenced long ago, and their long-lived effects in the atmosphere and the deep oceans will not dissipate for centuries and may mean human society is already close to or past a point of no return – a precautionary inaction is not a viable option.

More research and development to avoid or counteract the risks and to try and reconcile the opposing ethical imperatives is clearly needed urgently. Climate change is indeed a "wicked problem." "Climate change is an issue of survival, and equity is the price of survival" (Aubrey Myer, interviewed in *Nature Climate change* January 2012, p. 17).

Cross-References

- ▶ Biofuels: Ethical Aspects
- ▶ Conservation Agriculture: Farmer Adoption and Policy Issues
- ▶ Environmental Justice and Food
- ▶ Meat: Ethical Considerations
- ▶ Sustainability of Food Production and Consumption
- ▶ Water, Food, and Agriculture

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Community-Supported Agriculture

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Synonyms

Community shared agriculture; Subscription farming

Introduction

Community-supported agriculture (CSA) is one of an array of alternative agricultural processes. Related terms include sustainable agriculture, local food systems, regenerative agriculture, alternative food networks, and civic agriculture. CSA is continually evolving as it adjusts and matures within the interstices of the global food system. Though there is increasing variation in CSA, it is essentially characterized as "... a localized food production and consumption system, organized to share farming risks between producers and consumers, practice ecologically sensitive forms of food production, and contribute to building community and educating the shareholders about agricultural processes and realities through their participation" (Feagan and Henderson 2009, p. 203). Beyond these basics, CSA operations can vary considerably with respect to such things as how and where the "share" is accessed, opportunities for "working" shares, kinds of share products available, and presence of a "core" group. Importantly, CSA is a process that gives producers and consumers an opportunity to act intentionally on values and principles that are generally not feasible within the dominant food system.

In its "idealized" form, CSA is comprised of the following common characteristics: an intentional sharing of risks by the consumer/shareholder with the farmer/producer via payment of shares prior to the farming season, which ideally covers all real costs of production; a collaborative effort; a direct marketing form connecting consumers and producers; a means to help "localize" the food system; an ecologically responsible set of farming practices; and acts to educate consumers about this kind of farming relative to conventional food system characteristics.

Origins

CSA has its origins in two distinct though related sets of agricultural partnerships, practices, and values. The first, known as the Teikei movement (meaning partnership or cooperation), originated in Japan in the early 1970s by women concerned with ensuring healthy sources of food for their families and who initiated unique direct exchange partnership relationships with local farmers for organic food in order to do so (see Okumura 2004). The second sphere of influences are European in origin – most specifically those of German philosopher Rudolf Steiner's early 1900s anthroposophy and biodynamic farming concepts and from the German cooperative movement during this era. From this juncture, the bulk of CSA efforts both in North America and internationally are the outcome of the pioneering work of alternative food system advocate Robyn Van En in the United States. Indian Line Farm, established in 1986 in Massachusetts, is considered to be one of the first instances of CSA in the United States and was the result of efforts by Van En and others to put into practice these emerging values and beliefs. Given this lineage, the Henderson and Van En (1999) "guide" to CSA can be considered a useful and informative accompaniment to more recent CSA practice and development (though also see Groh and McFadden 2000, for their well-known writing on CSA).

CSA practice spread in distinct pockets from there, with current registered CSA numbers in the range of 1650 in the United States (see Robyn Van En Center 2014), with some organizations claiming numbers in that country on the order of 4,000 (Local Harvest 2014), and official US government sources suggesting numbers on the order

of 12,500 (USDA 2012). CSA is also increasing, though in smaller numbers, in the United Kingdom (on the order of 50), Canada, France, Japan, Brazil, Holland, Denmark, Germany, Argentina, and Australia, with more recent examples in countries like Romania and China. In this light, the interest on the part of those involved in the Teikei movement in Japan regarding recent CSA experience in the United States is indicative of the dynamic character of alternative food system efforts within the broader conventional food systems environment (Okomura 2004).

The last 20 years has seen the unfolding of what McFadden (2004) describes as "waves" of CSA development, and these waves are mirrored by a diversity of CSA research as this agricultural form has evolved and as its interest level and membership has grown. Though not exhaustive, such research and writing on CSA includes themes like health and nutrition affects, community and place concepts, guides to development and implementation, personal experiences, motivational surveys and analysis, gender, changing form and structure, adaptation to context, contribution to dietary shifts, effects resulting from membership and participation, nonmember perspectives, demographics and concerns, political-economic analyses, equity and social justice issues, and historical antecedents and ideological roots (agrarian pastoralism, Japanese Teikei, Steiner philosophical traditions, etc.). Though these are all considered appropriate research themes, this entry does not explore any of them in depth. Rather, it provides basic context for CSA, including commentary on demographic characteristics, form variations, concerns and critique, selected case studies, and on anticipated trends, referring to examples where appropriate.

CSA as Alternative Agriculture

CSA is considered variously as alternative, parallel, radical, and/or in opposition to the conventional (or industrial, modern, global) food system and is most commonly located in the so-called developed "north." Generally, CSA is held as a response to concerns within the conventional agricultural and food systems with respect to:

Increasing farm size and corresponding decrease in farm numbers

Aging on-farm populations and loss of youth cohort to other forms of employment and to urban areas

Loss/fragmentation of rural communities and local agricultural economies

Degradation of agroecosystems, monocultural production impacts, and related on-farm issues around species and biodiversity loss, soil compaction and degradation, erosion concerns, habitat loss, etc.

Health concerns perceived to be associated with various inputs employed – fossil fuel-based insecticides, herbicides, fungicides, fertilizers, genetically modified organisms (GMO), etc. and their perceived effects regarding diminished nutritive quality of, and contamination of, food and hence health

Consolidation of food production and ownership under the auspices of both fewer and larger agribusiness entities, with related concerns around increasing distance between producers and consumers, "commodification" of food and associated economic vulnerabilities related to international market transactions, etc.

Other off-farm issues like food miles and associated climate change concerns, structural dependency issues at the global level, and an increasingly disengaged and uneducated consumer population

CSA Motivations

Motivations associated with CSA farmer and shareholder membership engagement is often corollary to the list of concerns and/or traits associated with conventional agriculture noted above. That is, that participation in CSA is commonly a response to a set of values and beliefs that are motivated by some level of ecological, sociocultural, and/or political-economic concerns – what Russell and Zepeda (2008) in their study of the Troy Community Farm in the United States refer to as intrinsic properties. These include ". . . not

only the quality (freshness and flavor) of the produce itself, but the interactions the consumers have with the farm and CSA community and the sense of well-being or moral satisfaction that comes from supporting a system that consumers believe is good for the environment, their health and the health of their community" (p. 136). Re-embedding and the decommodification of food are the kinds of terminology often associated with these values, with studies examining farmers and shareholders generally observing prioritization of motivations as follows (see Cone and Myhre 2000; Feagan and Henderson 2009):

Healthy environment
Organic produce
Fresh produce
Local food sources
Knowledge of provenance and producers of food
In-season food
Health – personal and family
Reduction in packaging
"Community" relationship building in some form
Price
Some manner of events and celebrations

CSA Diversity and Attributes

CSA is distinctive in a variety of ways from other more conventional farming forms. CSA farm operations are generally smaller in size (7 acres on average [approx. 3 ha]) and are predominantly organic and/or biodynamic oriented in their food production methods; the operator-farmers are on average 10 years younger than their conventional counterparts and generally less experienced; see a greater percentage of women operators; farmers and shareholders are predominantly white (non-Hispanic); and shareholders are more highly educated and in higher income categories than the average consumer (Cone and Myhre 2000).

There is a range of attributes commonly associated with CSA, though this range is increasing as this farming form shifts and adapts. The most common are those with reference to the variation in size of shareholder numbers, organizational orientation, production methods, categories of food offerings and services, food distribution methods, educational methods, participation system and practices, and others. For example, shareholder numbers vary from perhaps 10–200 (and much higher occasionally), and CSA generally focuses on agricultural produce like vegetables and fruits, though there are those which may also supply dairy and egg products, meat, honey, and value-added goods like pickled produce and preserves, and there are now also examples of marine CSA.

Some CSA traits that have emerged give rise to both academic and activist discussion and debate. For example, CSA organizational structure can be a difficult and sometimes contentious theme, as writings on operational experiences by DeLind (1999) who has researched CSA extensively helped to highlight. Decision-making themes include the use or not of a "core" member group and the choice of tasks this core group then takes on (see McFadden 2004 for shifts in the core orientation of CSA), of share prices and appropriate reflection of full costs, CSA land ownership or not, member obligations regarding farm activities and duties, access or not by differing socioeconomic groups and other social justice objectives, educational issues and goals, and the occurrence or not of celebration and special events on CSA, for example. These are often the central kinds of decision-making and operational themes raised around CSA operation.

CSA Case Studies

Case studies of CSA have raised the profile of some of the context factors – meaning site- or place-specific conditions and broadly construed influences that can shape CSA scope and character. These have become more important with regard to understanding and defining CSA in its emergence as a farming form beyond its early inception phase, as it is apparent that "... the idealism with which the early adopters set out is in practice extremely hard, if not impossible, to maintain whilst still having to operate within the wider context of a globalized and industrialized

food system" (Charles 2011, p. 363). A selection of examples here serve to provide insights into both unique and specific CSA dimensions and simultaneously, the different paths CSA has developed in the last 10–20 years.

Commitment: Issues of commitment level and the dynamic character of shareholder value orientation along with producer narratives on CSA aspirations are a continuing discussion in CSA experience and practice. Devon Acres Organic CSA with a roughly 20 shareholder average over its 20-year history, and a share comprised largely of vegetables (though meat, milk and eggs are available to buy separately), is a useful example in this regard. Feagan and Henderson (2009) used Devon Acres in Ontario, Canada, to explore the terminology of "instrumental" through to "functional" and "collaborative" support, in order to assess shareholder participation and commitment levels and the factors influencing these choices. This study drew attention to the kinds of on-the-ground pragmatics of CSA function and operation – both as a means to observe the contingencies of daily partnership issues, as well as to highlight some of the larger factors which shape individual CSA efforts within the prevailing industrial food system context. It is useful to note in this study that shareholder values generally shift over time and that in contrast to collaborative ideals, most relations between farmer and shareholders could be conceived as instrumental, with longer-term shareholder values and practices on this CSA tending to functional and occasionally into collaborative in their orientation.

CSA in China: The first CSA in mainland China – Little Donkey begun in 2008 and located in the northwest of Beijing as part of a university project there – highlights the role of dramatically changing socioeconomic conditions in that country. Such changing context is giving rise to a growing middle class whose concerns and "mistrust" around health and food are associated with an increasing perception of food production concerns in China broadly. This shift in consumer awareness in tandem with the lengthy history of what in effect can be observed as sustainable peasant agricultural traditions in China provided the conditions within which an acceptance of a CSA form of food provision was now possible (Shi et al. 2011). Other aspects of the unique context of this case study are those attached to the uncertainties of land tenure in China and of the unknowns associated with different levels of Chinese government support of such farming models. It is appropriate to keep in mind that this is just one CSA, with around 130 shareholders at the time of the study, in a highly populated country. Notable in this case study, in the sense of its utility for examining variations in cultural perspectives on CSA, are the differences in conceptual definitions. For instance, though "sustainable agriculture" is the term used in the study, the authors observe that the corresponding Chinese term "ecological urban agriculture" (552) is only roughly equivalent, in that it is also considered to be "multifunctional," and this incorporates aspects of agriculture that sustainable agriculture does not usually subsume in western writings on this topic.

Gender: The theme of gender also has become a recognized and sometimes contentious theme in CSA experience. This theme, raised in works like that of Cone and Myhre (2000) and Wells and Gradwell (2001), for example, have examined CSA for its gendered constructs, using the language of caring motives and practices, commonly positioned as feminine values. These "caring" attributes are frequently situated in contrast to those associated with conventional agriculture and perceived masculinized traits or values like control, competition, exploitation, and detachment. In this vein, it is notable that the proportion of males is much higher in conventional agricultural operations than that of CSA. Examination of CSA structure and operation through this lens suggests consideration regarding potential differences in the ways women develop relationships and connections, process information and manage power, and the roles and responsibilities that women assume around childcare. Though discussions regarding gender in CSA emerge variously from "essentialist," "situated," and "socialization" variants, such gendered points of departure help to raise the profile of questions about the

longer-term goals and farming ethics of CSA as a process relative to conventional agriculture and as Wells and Gradwell claim, to the role of care ethics in Western philosophy more generally.

Place: Another trait that some consider integral to CSA is its orientation or attachment to "place" (see neolocalism). In terms of context, place mirrors a range of site-specific attributes to which CSA is often tailored: soils, climatic and hence farming season duration, agricultural history, local community politics, key or inspirational entrepreneurial individual(s), etc., along with the objective of reducing the distance between consumers and producers more generally. This kind of place orientation trait is notable in the expression by those who see CSA as meaning: "a fundamental rethinking of the relationship among food, economics, and community, a move towards a greater degree of ecological sustainability and an attempt to partly disengage from the global supermarket and reestablish vital local agricultural economies" (Schnell 2007, p. 550). The common usage of terms like place, community, and locality in the discourses around CSA is indicative of how the provenance or geographic origin of food has become part of the place-positioning value that CSA attaches to its agricultural purpose and intentions. And this in turn is suggestive of the discussions regarding the decommodification of food through such alternative food provision venues – that food value is not just determined by its price, for instance. In this vein, it is also discernible that CSA location is often relative to certain kinds of geographic parameters like those related to areas of higher population density – an urban orientation, higher-income areas, more predominantly white populations, and to some degree, to farming areas with a legacy of smaller agricultural operations. These conditions up to this juncture have fostered a greater incidence of CSA development (Schnell 2007).

Membership Learning: Examination of motivations of shareholders and farmers on a CSA in Scotland helped to reveal the potential for elevated levels of understanding and education resulting from CSA membership and participation. What they discerned as "graduation" effects (see Cox et al. 2008) was about how participation in this kind of producer-consumer network affords potential for broadened understanding of various aspects of the conventional food system relative to the experience of this alternative agricultural system. It is appropriate however to point out that such graduation effects occur with those members who decide to continue membership and hence are more willing or able to learn and adapt. In contrast, non-continuing members expressed less interest and/or did not exhibit such graduation effects, perceiving CSA to demand adaptation and changes in practices and attitudes which were not part of their original intentions for participation.

CSA Concerns

A number of concerns have emerged since the inception of CSA, including a variety of on-the-ground realities associated with CSA structure and operation. These include such things as:

"Self-exploitation" of farmers and an unequal sharing of risks
Nonparticipation on the part of shareholders
Inequities between farmers and shareholders
"Local" and "localism" traits associated with CSA requiring more critical evaluation
The need to understand and evaluate CSA more clearly with respect to its role as a process within, parallel to, complementary, and/or in contrast to the conventional food system
Lack of understanding and/or misinformation about CSA character and aspirations
CSA place with respect to concepts of "community" and models of social interaction, civic agriculture, etc.
Changing structure and organizational elements behind CSA: seeking effective function and stability in the midst of food system change
Membership attrition and turnover

For example, self-exploitation of farmers is observed when CSA producers are unable to ask for and receive compensation that is reflective of the full value of their contributions in labor and effort. Generally, this means that the farmers

underprice or subsidize the shares in their CSA by not paying themselves adequately. Further, inequities between farmers and shareholders is common and is tied to the basic observation that the shareholders are generally middle to upper class, making substantially more money than the farmers of the CSAs to which they belong. If indeed CSA has some radical or oppositional long-term objectives relative to the conventional food system, then social inequalities located on-farm suggest the extent of work still to do in moving this objective out into the broader social order.

CSA Trends: Future Directions?

Original CSA ideals have seen many changes over the almost 30 years since CSA inception in the United States (and since its earlier antecedents in Europe and Japan). This has meant some adaptation of the attributes around which it originally aspired, for instance, while still exhibiting both processes and objectives that respond to the range of concerns associated with conventional agriculture. Part of the adaptation process has been tailoring CSA practice to specific contexts as case study research has been useful in highlighting. Specific emerging issues and responses include those of land tenure in the face of increasing costs of land and developing means by which to network through collaboration and cooperation among CSAs in close proximity to one another. Others would include means to address ways to be more inclusive and socially diverse while also ensuring that CSA efforts sustain farmers economically.

Further to these ideas, CSA research and exploration have spread into geographies where CSA is only just beginning to emerge. This includes areas like Southeast Asia, China, and so-called less-developed countries, whose "locals" are just as important as the *local* around which much CSA development in the north is associated. Continued work in CSA can also benefit from better understanding of motivational characteristics of membership and such things as potential adaptation and behavior change that can ensue from participation – by both shareholders and the farmer-producers involved.

Further work and understanding of the influence of context or situation would also provide both a sense of the realities and pragmatics behind such alternative agricultural efforts, as well as a sense of how the broadly accepted values, principles, and practices of CSA can be effectively adapted to place. Recent research on the development of CSA in China can provide some useful insights on situational and values 'context' attributes for example, that is unique to the largely western character of CSA examination and practice so far. And if CSA is to manifest some of the kinds of long-term outcomes contained in its alternative or oppositional role to conventional agriculture, then efforts to address member attrition rates through the development of both more effective communication between farmers and shareholders, and its corollary regarding learning about CSA, would be appropriate work towards increased longevity of membership. Finally, recognition of the still minor overall contributions that CSA makes with respect to the dominant conventional food system would be an appropriate context to which further research and implementation efforts could be situated or directed.

Summary

This entry has provided a survey understanding of CSA – community-supported agriculture – by defining its basic contours, some notes on its history and development, on its broadly shared characteristics, as well as the role of various context factors which influence and shape CSA in place. This included some observations regarding ongoing concerns and trends. Though development and differentiation over time is an important aspect of current and likely future CSA, it is apparent that the growth and interest in CSA as an alternative farming system or network within or parallel to the conventional agricultural system, by both consumers and producers, is a dominant attribute associated with this form of farming.

Cross-References

- Agricultural Ethics
- Authenticity in Food
- Ecosystems, Food, Agriculture, and Ethics
- Farm Management
- Food and Place
- Local and Regional Food Systems
- Public Institutional Foodservice
- Slow Food
- Sustainability of Food Production and Consumption
- Trade and Development in the Food and Agricultural Sectors

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Company Identity in the Food Industry

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Synonyms

Company image of food business; Food industry and communication with stakeholders; Representation of food industry

Introduction

Large-scale organizations have to respond actively to the growing competition on the economic market. One of the ways for companies to be recognized as trustful and competitive business entities is to create a strong company

identity that is highly valued by workers and stakeholders. This issue proves to be especially important in the food industry, which has to provide products and services meeting various needs and expectations simultaneously, such as nutrition, value for money, as well as security and safety. To take a broad perspective of the issue that allows for creating and maintaining the effective identity of companies representing food industry, all sensual dimensions have to be examined, paying attention to spheres of cognition.

Defining the Term *Company Identity in the Food Industry*

Company identity is understood as the sum of components shaping both corporate and organizational identity. These two concepts have both similarities and differences as far as the target audience and communication channels are concerned. Corporate identity is directed at external stakeholders and their perception, whereas organizational identity concentrates on the internal sphere, for example, the way a company is viewed by its employees (Whetten and Goldfrey 1998). Additionally, corporate identity is related to the visual aspect of company's life (Whetten and Goldfrey 1998), whereas organizational identity is more concentrated on the verbal representation (Hatch and Schultz 2000). Thus, the notion of company identity encompasses various methods of analyzing social personae at the level of business entity and takes into account both its internal and external dimensions. It should be noticed that the concept of company identity is often not observed in the course of everyday activities and standard performance, but it is rather addressed when some uncertainty appears, regarding such issues as occupation, company, or person (Alvesson 2007).

Moreover, it is often called upon in the moments of change, crisis, or risk when the common values and norms are supposed to help face some new issues. Company identity serves various functions at both the internal and external levels. Company identity is important since it determines the way customers perceive the offered products. Internally, it gives some guidance for its employees regarding the values esteemed by the organization they work for. Additionally, company identity is visible not only in the companies with established positions on the market but also in the nascent ventures that seek investors since entrepreneurs are interested in information how the brand is perceived (Bielenia-Grajewska 2012a).

Multidimensionality of Company Identity

The concept of company identity encompasses various spheres since companies operate in changing legal, social, and cultural realities. The mentioned fluidity can be observed at both the individual and group levels, by analyzing how both worker's and company's personae have to respond to the alternating environment. Additionally, the way one perceives organizations depends on the sensual dimensions of company representation and how different senses are engaged in creating and maintaining company identity. Thus, both the environmental factors encompassing, among others, law, society, and culture and the sensual tenets connected with human apprehension and cognition determine the creation and perception of companies operating in the food industry.

Legal Aspects of Company Identity

Companies operate within a legal environment. Each country has laws governing the performance of the food industry. For example, on the US market, the guide entitled *Guidance for Industry: A Food Labeling Guide* issued by the Food and Drug Administration specifies, among others, the use of information panel, size of letters, and necessary data on producers' name and address that should be available to customers. In New Zealand, there are four acts governing the safety of food: Food Act 1981, Animal Products Act 1999, Agricultural Compounds and

Veterinary Medicines Act 1997, as well as Wine Act 2003. Moreover, the legal aspect of the food industry is also of interest to producers of food who are active in shaping the legal sphere of the food industry. One of the reasons for their engagement in food legislation is to create and maintain the competitiveness in the food industry and enhance the trust of customers in their products.

Social Aspects of Company Identity

Food companies serve various functions in a society. For example, the way a food company is presented takes into account the notion of social responsibility. The corporate social responsibility (CSR) policy in the alimentation sector is broad and diverse, concerning various issues and encompassing not only the users (customers) but also the environment the food comes from. As a result, some food manufacturers stress the ecological aspect of food manufacturing, e.g., by stating that during the process of production, they use renewable energy or environment-friendly ingredients. One of the notions often stressed in the food industry communication is the issue of food safety that entails, e.g., the protection against microbiological risks such as bacteria and viruses, toxicological risks regarding chemical substances, and other nutrition risks (Deblonde et al. 2007). Thus, such topics as guarantee, security, certification, and control are often handled in corporate communication taking place in the food industry.

A related notion in the identity of a food company is the role of regional community in manufacturing alimentation. Thus, food producers might highlight, for example, the engagement of local farmers and workers in food preparation or accentuate the appreciation for natural surroundings where the company operates. Another notion is the proper treatment of subordinates and the respect of employee rights. It entails the recognition of workers' cultural and linguistic identities. As a result, the companies that respect workers' linguistic identity can form their common company image based on appreciation and trust that stimulates company's effectiveness and competitiveness, both on the internal and external levels (Bielenia-Grajewska 2012b).

CSR can also be related to quality through the proper selection of animals or plants for the preparation of food, and avoidance of using artificial substances or additives. Apart from the product-oriented CSR policy is the process approach to food production. The producers concern themselves not only with the final outcome but also with the processes involved in food manufacturing.

Cultural Aspects of Company Identity

People choose food products that are congruent with their system of virtues and their personal characteristics. When the product or the company violates one's code of values, then a person might not opt for the company and its products (Paasovaara et al. 2012). The same applies to respecting religious beliefs and dietary preferences in advertising, offering, and serving food.

As far as the price factor is concerned, an individual's financial situation and the perception of quality and price ratio vary. Thus, customers judge that food is cheap, expensive, or good value for money according to their personal income, individual preferences, and shopping habits. Another aspect taken into account by food companies is mood and its implication for food selection. Food is also used to stimulate social situations because it may enhance meetings with other people. Moreover, since alimentation may influence other spheres of life, companies might call attention to how they revolutionize one's cooking habits by introducing new ways of preparing dishes that make cooking more pleasant, easier, and quicker.

As far as the notion of food portability is concerned, since people use products in different moments of their life, companies often stress the size or ease of transporting various comestibles. Another issue is the convenience of packaging, including the easiness of (re)opening or (re)closing the container with food as well as its thermal features related to food storing. Food producers

stress that the merchandise they offer is low in calories, fat, gluten, sugar, etc. The other aspect is the type of meal the food is selected for since various products are consumed in many cultures at different times of the day. For example, biscuits or cakes may constitute the breakfast in some countries, whereas in the other ones they belong to the group of snacks. Thus, cultural preference should be taken into account when the food product is advertised in order to reach the target audience.

Sensual Dimensions of Company Identity

Since all of the senses influence food selection and consumption, companies will rely on the visual, verbal, auditory, olfactory, and tactile experiences of their customers and stakeholders. The simultaneous appeal to different senses may strengthen the identity of companies and stimulate customer preferences as well as the subsequent food selection and consumption.

Visual Dimension of Company Identity

The visual aspects of company identity are mainly represented in such elements as logos, packaging, websites, or promotional materials. Among various visual tools, color plays a very important role since the use of color is supposed to evoke certain emotions and reactions. For example, since black is often associated with luxury, specialty, and individuality, it is used to advertise commodities that are expensive or directed at customers searching for individual and special merchandise. Green, on the other hand, is selected for products that are ecological, natural, and sustainable. Color is also employed to associate the offered food with some emotion it should evoke; for example, red symbolizes love and passion, whereas blue denotes relaxation.

The choice of visual tools selected for advertising the food company and its products depends on the aim of advertisements or corporate materials. For example, the food company rather opts for calm colors if it aims to stress its social or ecological activities taking place within standard business performance. However, the food producers select bright shades if they want to be viewed as dynamic or if they want to appeal to young consumers.

The other issue is the representation of group and community in food advertising. Food products can serve various functions in one's social life, e.g., they can be used in the moments dedicated to intimacy or companionship. Moreover, comradeship may stimulate food consumption; in some studies it is shown that due to the process of social facilitation, people eat more when they are in company. Thus, the motif of group participation is also applied to advertising, showing that consuming is a social and pleasurable activity. In addition, sometimes producers stress that even people who are allergic to some substances or follow a gluten-free diet can enjoy meals due to the elimination of these undesirable ingredients.

The size of containers or the meal itself also determines the food intake; if the portion is large, then people will eat more. In other studies it is stressed that the environment, such as the restaurant interior, may enhance food consumption (Stroebele and De Castro 2004). Thus, not only the food itself shapes food intake but also the surrounding (the design of shops, restaurants, or bars) determines customer preferences. Since the food coldness or heat stimulates hunger, appetite, and food preference and determines the amount of food intake, the issue of temperature is taken into account in creating corporate materials (Stroebele and De Castro 2004). This feature is also visible in the way food companies advertise their products. Meals that are supposed to be served hot are shown with some smoke or in the process of being cooked.

Additionally, the temperature of food is often linked to the functions it should serve, for example, hot tea for warming up and cold tea for cooling off. However, it should be remembered that the issue of food temperature should be viewed through the perspective of cultural differences since individuals' expectations regarding the temperature of meals vary depending on their culinary habits. The same applies to various

kitchen utensils or equipment used in advertising food products. The selection of cutlery or crockery in picturing food depends on the target group the product is directed at.

In the case of beverages, cloudiness is an issue that might be stressed. For example, wines or beers are expected to be clear, whereas cider is expected to be cloudy. The other notion is glossiness that mirrors the light reflectance of such products as cakes, apples, etc. The next aspect of color is connected with the intensity of some color related to food processing. Thus, products that are baked or cooked should possess the type of color that is usually associated by customers with the merchandise of that type (Lawless and Heymann 2010).

Verbal Dimension of Company Identity

The verbal dimension of food company identity can be observed at word, sentence, or story levels. Looking at the issue of verbal identity from the word perspective, the name of the company, being often the name or the surname of the founder, serves as the guarantee of tradition and quality. When the brand is the name of the person, the advert is often accompanied by a narrative, which explains how the company originated and how long it has been present on the market. To add, the length of words influence customer preferences and descriptive names determine post-consumption evaluations. Consequently, the dishes having longer and elaborative names are often classified as tastier or more appealing than similar products with short names (Wansink et al. 2005).

In addition, figurative language is an important tool of creating and sustaining the linguistic identity of food companies. Generally speaking, metaphors are used in business discourse since they facilitate the dialogue between companies and their stakeholders (Bielenia-Grajewska 2009), mainly by relying on well-known concepts to picture novel issues. In the case of the discussed food industry, they turn out to be useful in showing the customer some novelty in alimentation production and processing. Another explanation for the popularity of metaphorical names in corporate communication is the fact that they are remembered easier than standard expressions (Espunya and Zabalbeascoa 2003). As a result, customers are more likely to choose the food product that has the name they know or understand or at least they can easily grasp. Among the different domains used in representing the discussed food industry, the most popular ones include magic, treasury, art, and masterpiece. Showing the food product as mystic, supernatural, or artistic may endow the offered merchandise with the aura of specialty, uniqueness, and prestige – simultaneously stressing efficiency in preparation yet distinctiveness in taste or use.

The most popular adjectives in describing a company include the following: the best, number one, top class, and leading (Bielenia-Grajewska 2012a). These adjectives are used to stress company's strong position on the market or its unique expertise visible in the offered services and products. Certain verbs are also effective in showing the long-lasting effect of using selected food products. For example, the verbs connected with continuity are used to underline the long-term effects related to nutrition or pleasure, showing that the satisfaction or nourishment is continual, e.g., takes place every day or continues even after one finishes eating the comestibles. The other aspect of using verbs in shaping company identity is connected with the use of tenses. By opting for continual tenses, the link between past and present may be stressed, showing company's role in preserving national cuisine and customer eating habits.

Numbers also convey meaning. For example, they can be used to stress the unique features of the product (e.g., 100 % of best ingredients, 100 % of satisfied customers). Numbers also play a role in informing customers on people or animals involved in producing the goods. For example, dairy products are advertised by quoting the number of farmers delivering milk or the number of cows involved in milk production. Moreover, numerical features are used to stress the fact that the merchandise is rich in some substance (100 % of the recommended dose of magnesium) or low in other elements (only 0.5 % fat, 0 % color additives).

The other verbal way of creating company identity is by using foreign languages. This linguistic method may serve different functions. On the one hand, foreign languages are used to signal the origin of the offered product or to stress its luxury or uniqueness. For example, French is used in advertising champagne or brie, whereas Italian is employed in promoting mozzarella or pizza. On the other hand, English often serves as the mark of international scopes of company's performance. Thus, campaigns may be conducted in English to reach a considerably vast number of interested stakeholders coming from different cultures. Language issues prove to be especially crucial when the manufacturers want to offer their product on the new markets. The names, slogans, and organizational communication at both the internal and external dimensions should be not only translated but also localized, taking the target culture and its expectations into consideration.

Olfactory Dimension of Company Identity

Olfactory product marketing is an important element of enhancing customers to buy certain products, and consequently, scents are used to stimulate customers' food selection and reinforce subsequent consumption. For example, the smells of merchandise available in the shop are intensified in order to make the client interested in them. This strategy is often used in coffee outlets since customers tend to buy more coffee in the shop after being attracted by its smell. Sometimes food products are used to increase the sales of other goods. For example, the scent of lemon is used in fish restaurants, whereas the scent of grass is supposed to increase the sales of dairy products (Pradeep 2010). Food scents are used in shops to stimulate the purchase by raising some thoughts related to certain memories, holidays, or important dates. For example, chocolate aroma is used for the the Valentine's Day (Drobnick 2006) since the exposure to certain ambience is supposed to influence customers' food choices (Stroebele and De Castro 2004). Another example of scent marketing is impregnating the product package with some aroma to disseminate when the package is opened (Wansink et al. 2005). The advertisements of food presented in magazines may also have the pages enriched with some food scent.

Auditory Dimension of Company Identity

Music is part of many daily life activities, including shopping and dining. It has been proved in various studies that the type and volume of sounds influence beverages and food consumption. For example, slow and soft music is used in places where eating is supposed to take long, whereas loud and quick tunes accompany fast meals (Stroebele and De Castro 2004). Music is also used to stimulate some shopping behaviors, including the songs associated with holidays.

The other aspect of auditory identity is related to the sounds produced by food in the process of consumption. For example, the sensory assessment of crackers takes into account the loudness of sounds created when the cracker is masticated by teeth. To add, the perception of crispness and crunchiness determines the customers' opinions on product quality (Rahman 2009). Moreover, sounds that accompany food preparation may also stimulate food consumption. Sonic marketing is used in some restaurants and bars where customers can not only see but also hear the process of dish preparation.

Tactile Dimension of Company Identity

Apart from the auditory experience, oral-tactile sensations determine one's selection of food products. Tactile texture can be classified into oral-tactile texture, mouth feel features, phase stages in the oral cavity, and tactile experience related to using some object (e.g., utensils) by hands. Thus, such notion as slippery and roughness of food, certain feelings related to the change of the food state in the mouth (burning, hot, astringency), and the geometrical shapes of

utensils and sensory hand tactile attributes (fracturability, firmness, spreadability) determine the food selection made by customers (Lawless and Heymann 2010). Customer satisfaction related to food consumption is also connected with the tactile dimension of the environment where the food is served. Consequently, the surface of tables as well as the chair upholstery may determine the satisfaction with the served food.

Channels of Communicating Company Identity in the Food Industry Sector

The aim of a company is to make itself outstanding on the market and to efficiently appeal to potential stakeholders. Thus, the food companies should use both traditional and new media to contact customers and attract potential clients and stakeholders. Taking into account the fact that nowadays face-to-face relations are substituted with distant (even virtual) contacts, companies have to consider other ways of strengthening the relations with customers and stakeholders. Consequently, the role of Facebook, Twitter, and blogs is becoming more and more popular in the food industry communication. The most outstanding advantage of the new media is the low cost and high speed of addressing a large number of stakeholders. Company identity is, of course, also communicated in conventional media, including advertising campaigns, signs, and promotional events.

Summary

The issue of company identity in the food industry encompasses various notions. To take a broad perspective of the issue that allows for creating and maintaining the effective identity of companies representing food industry, all sensual dimensions have to be examined, paying attention to all spheres of human cognition. At the same time, diversified communicative channels should be used in order to communicate with various stakeholders. Moreover, it should be remembered that the importance of selected characteristics depends on the type of food company and the tools adapted for creating and maintaining company identity should take into account the needs and expectations of diversified groups of stakeholders.

Cross-References

- ▶ Food Labeling
- ▶ Food Risk Communication
- ▶ Geographical Indications, Food, and Culture

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New Zealand Food Legislation. http://www.foodsafety.govt.nz/policy-law/food-regulation/nz-food-legislation/

Conservation Agriculture: Farmer Adoption and Policy Issues

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Keywords

Sustainability; Soil erosion; Farming systems; Environment; Tillage

Synonyms

Conservation farming; Conservation tillage

Introduction to Conservation Agriculture

Conservation agriculture (CA) reduces soil productivity loss through several practices that minimize the alteration of soil composition and structure, including activities that reduce, change or eliminate soil tillage, and avoid residue burning so as to maintain adequate surface cover throughout the year (ECAF 2001). The line between conventional farming and CA often blurs as conventional agriculture utilizes many practices typical of CA, such as minimum or no-tillage. However, the conventional farmer believes that tilling the soil is beneficial and would increase tillage if possible, while the conservation farmer questions the necessity of tillage in the first place.

CA maintains a permanent or semipermanent organic soil cover consisting of a growing crop or mulch that physically protects the soil from the elements and feeds soil biota. Zero tillage with direct seeding is perhaps the best example of CA, since it avoids the disturbance caused by mechanical tillage. A varied crop rotation is also important to avoid disease and pest problems. Some examples of CA techniques include (i) direct sowing/direct drilling/no-tillage, where the soil remains undisturbed from harvest to planting except for nutrient injection; (ii) ridge-till, where the soil remains undisturbed but planting takes place in a seedbed prepared on ridges; (iii) mulch till/reduced tillage/minimum tillage, where the soil is disturbed prior to planting; and (iv) cover crops, where sowing of appropriate species takes place between successive annual crops to prevent soil erosion and to control weeds.

The last several decades have seen rapid advances in the technologies associated with minimum or no-tillage agriculture and their adaptation for nearly all farm sizes, soil and crop types, and climate zones. To date, CA has been implemented on approximately 125 million ha worldwide (Kassam et al. 2012), but adoption remains slow in some regions (e.g., Africa). As such, there is considerable interest in promoting further CA adoption around the world.

Conservation Agriculture: Farmer Adoption and Policy Issues, Table 1 The distribution of benefits and costs associated with conservation agriculture across different spatial scales (check mark indicates presence of benefit or cost)

	Incidence at various scales		
Benefits and costs	Farm	Regional/ national	Global
Benefits			
Reduction in on-farm costs: savings in time, labor, and mechanized machinery	•		
Increase in soil fertility and moisture retention, resulting in long-term yield increase, decreasing yield variations, and greater food security	•	•	•
Stabilization of soil and protection from erosion leading to reduced downstream sedimentation		•	
Reduction in toxic contamination of surface water and groundwater		•	
More regular river flows, reduced flooding, and the reemergence of dried wells		•	
Recharge of aquifers as a result of better infiltration		•	
Reduction in air pollution resulting from soil tillage machinery		•	•
Reduction of CO_2 emissions to the atmosphere (carbon sequestration)			•
Conservation of terrestrial and soil-based biodiversity			•
Costs			
Purchase of specialized planting equipment	•		
Short-term pest problems due to the change in crop management	•		
Acquiring of new management skills	•		
Application of additional herbicides	•	•	
Formation and operation of farmers' groups	•	•	
High perceived risk to farmers because of technological uncertainty	•	•	
Development of appropriate technical packages and training programs		•	

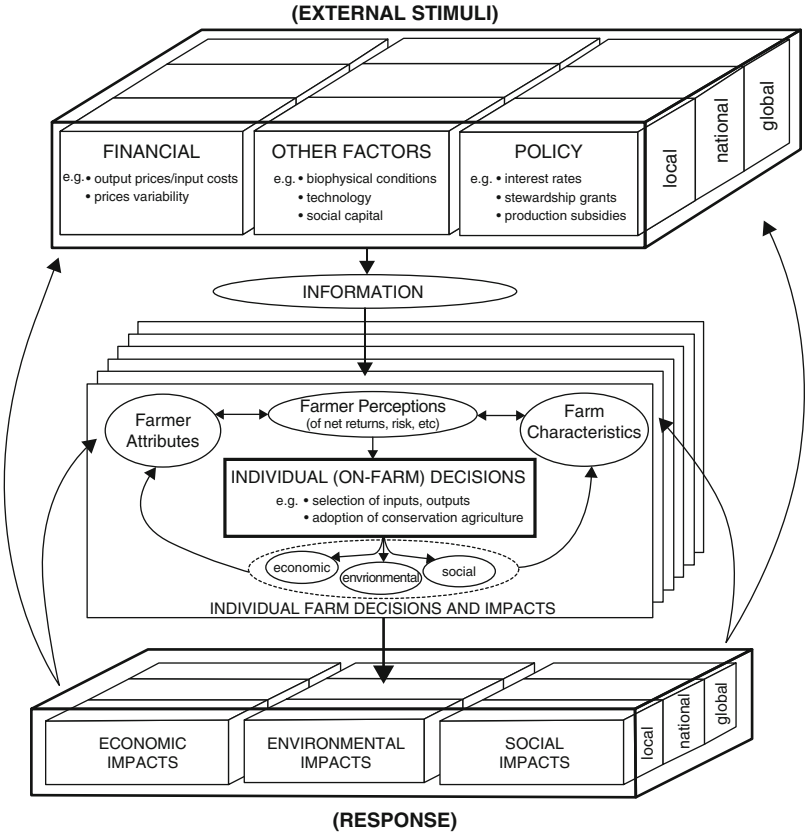
Sources: Knowler and Bradshaw (2007)

To effectively do so, it must first be demonstrated that, for society as a whole, the adoption of the new technology generates net benefits (however defined). While few studies have addressed this broader social welfare aspect of agricultural technologies such as CA, it is often assumed that the net benefits are positive.

Table 1 shows the spatial incidence of benefits from adopting CA. It suggests that there may be a substantial benefit beyond the farm itself for which the farmer may not be compensated. That is, divergences appear to exist between privately appropriable benefits and national or global economic benefits stemming from an expansion of the area under CA. In agriculture sectors around the world, government policy has long sought to address such divides in an effort to boost collective benefits. This situation would appear to similarly invite the promotion of CA by government agencies. However, questions exist around the effectiveness of particular policy approaches and whether CA is sufficiently attractive to farmers and to society in some regions to warrant aggressive government intervention (Giller et al. 2009).

This question is not easily answered. The process of technology adoption at the smallholder level is complex, as demonstrated by the Fig. 1. Smallholders make choices about technology and resource use under the constraints imposed by their household and on-farm resources, as well as higher level factors at the local to global scales. Information about new technologies and financial conditions is a precursor to changes in farm practices. All these factors affect the net returns, risks, and other pecuniary elements that drive the decision-making process.

In the following sections, the financial and other factors that play upon the adoption of CA and similar technologies by smallholders are reviewed. While financial profitability can be necessary, it is not a sufficient condition for adoption as many studies have shown. More recent research has employed increasingly sophisticated



Conservation Agriculture: Farmer Adoption and Policy Issues,
Fig. 1 A conceptual framework for studying the adoption of conservation agriculture (Source: FAO (2001))

statistical tools to analyze the myriad influences on adoption, and some of this new research is presented here, as well as possibilities to extend research in new directions that include network analysis and social capital. Subsequently, the policy dimension is introduced into the discussion, and the various means of addressing suboptimal rates of CA adoption are discussed, considering both conventional government policy and more novel governance approaches.

Farmer Adoption of Conservation Agriculture

Financial Considerations in Adopting Conservation Agriculture

Since the seminal work of Crosson (1981), numerous financial analyses of conservation tillage have shown that typically it produces higher farm-level net returns than conventional tillage. This is largely true because of reduced costs for machinery, fuel, and labor, combined with unchanged or improved yields over time. Beyond conservation tillage alone, a great number of soil-conserving practices typically produce net financial benefits for adopters, based on meta-analyses of farm-level financial analyses from sub-Saharan Africa and Latin America/Caribbean, as seen in Table 2.

The analysis reveals that for the sub-Saharan African and Latin American/Caribbean regions, on-farm financial analyses of CA-related practices produce a positive net present value (NPV) in a vast majority of analyses, while other conservation practices (non-CA) did so to a lesser degree. More recent research has raised concerns about the private and social attractiveness of CA under specific smallholder conditions, particularly in Africa (Giller et al. 2009). The debate around this point continues to stir controversy and is yet to be resolved.

Conservation Agriculture: Farmer Adoption and Policy Issues, Table 2 Comparison of financial net present values for conservation agriculture versus other soil and water conservation technologies ($n = 136$)

Technologies	Total analyses	Number with positive NPV	Percent share (%)
Conservation agriculture and related agronomic approaches[a]	40	34	85
Vegetative, structural, and other management improvements[b]	96	55	57
Total, all analyses	136	88	65

Source: FAO (2001)

[a]These practices include (i) field-level agronomic practices that explicitly match the character of conservation agriculture according to FAO (2001) and (ii) farm-level agronomic techniques such as intercropping, contour farming, ridging, or strip cropping that although not formally defined as CA contribute similarly to improved soil condition

[b]Examples include shelterbelts, terracing, bunding, and agroforestry

Other Considerations in Adopting Conservation Agriculture

If it is assumed that the practices associated with conservation agriculture are profitable, then their diffusion among farmers should occur on its own. However, the actual or perceived profitability of conservation agriculture can vary from place to place (Stonehouse 1995), so that there is a need to identify factors beyond just farm-level net returns that explain adoption or non-adoption. There is a long and rich tradition of research that seeks to explain farmers' adoption of particular agricultural innovations. Researchers typically select a number of potential independent variables for inclusion in their analysis based on prior theorizing and test, usually via logistic (logit) or probit regression, to determine which variables correlate with adoption in some statistically significant sense. Factors found to be important in such studies were reviewed by Knowler and Bradshaw (2007), and their findings are summarized below.

Farmer awareness or perception of soil problems is frequently found to positively correlate with the adoption of soil conservation practices like no-till. More generally, assessments of the presence of conservation attitudes among farmers adopting conservation agriculture have revealed both positive and insignificant correlations. For example, the education level of a farm operator commonly correlates positively with the adoption of conservation agriculture practices; however, some analyses have found education to be an insignificant factor, or even negatively correlated with adoption. The farmer's age has been assessed often, but it is difficult to link to the adoption of conservation agriculture, as with assessments of "experience" that reveal both positive and insignificant correlations.

Assessments of the adoption of conservation tillage and similar soil-conserving practices have often included the biophysical characteristics of the farm itself. For example, it has been hypothesized that owners of larger operations are more willing to invest in new technologies such as direct seed drills. However, empirical studies demonstrate mixed results so that the overall impact of farm size on adoption is inconclusive. With respect to rainfall, similarly mixed results have been found. Some studies have found that the presence of soil erosion and other soil problems on a farm correlates positively with conservation tillage adoption. Related to this finding, various studies have shown that farm operations located within regions of steep slopes and erodible soils have a greater tendency to adopt soil conservation practices, but not always. Indeed, farmer awareness of, and concern for, soil erosion is probably the more critical factor affecting adoption.

Land tenure, farm income/profitability, and labor supply have garnered some attention in studies of conservation agriculture adoption. With respect to tenure, conventional wisdom suggests that owned land is better maintained by farmers than leased land. While some empirical results have supported this hypothesis, other studies have not. With respect to wealth, it is regularly hypothesized that the adoption of conservation agriculture, or indeed any new technology, requires sufficient financial well-being, especially if new equipment is required. Many analyses that have investigated the role of income and farm profitability on adoption have revealed

a positive influence. Complicating this picture is the presence of off-farm activities/income which has been found to have a mixed effect on adoption.

Without knowledge of the practices associated with conservation agriculture via some information or communication channel, adoption is improbable. Indeed, studies of innovation adoption and diffusion have long recognized information as a key variable, and its availability has been found to correlate with adoption. Information becomes especially important as the degree of complexity of the conservation technology increases (Nowak 1987). Government extension programs can do much to provide such information on CA and thereby influence farmers' decisions. As noted earlier, government programs aimed at encouraging the adoption of conservation practices among farmers can be justified by the potential divergence between the narrow interests of individuals and the broader interests of society (Pierce 1996).

In contrast, Lynne (1995) argues that farmer decision-making already reflects a compromise between private and collective utility. Producers often identify this latter interest as "the right thing to do," at least in those places where stewardship is part of the cultural norm. More generally, it has been recognized that individual actions related to the environment may reflect a society's social capital (Pretty and Ward 2001). In the broadest sense, social capital refers to the interconnectedness among individuals in society and considers relationships as a type of asset. Attributes such as "kinship," "connectedness to others," and related social capital characteristics have been argued to influence positively the adoption of conservation technology (Moore and Cisse 2005). Similarly, some analyses have identified membership in producer organizations and other social networks as a positive influence on adoption. Investigations of the role of social capital and networks in conservation technology adoption are increasing, but more needs to be done. More recent analysis of the adoption of broadly defined best management practices places a great emphasis on the role of agency and local networks of farmers or watershed groups (Baumgart-Getz et al. 2012).

In the end, the meta-analysis study by Knowler and Bradshaw (2007) found that few if any variables introduced into empirical analyses of adoption were found to universally explain adoption in a consistent way. They conclude that "it is possible that researchers have reached a limit in terms of contributing to a refined understanding of the reasons for conservation agriculture adoption" (p. 44). Instead, it is suggested that developing improved site-specific models may be a better avenue of investigation.

Problems and New Approaches in Studying Adoption of Conservation Agriculture

Some key issues arise in studying adoption behavior that have not been considered adequately in previous empirical studies. For example, how do we properly incorporate the constraints that farmers face in managing their operations (i.e., profits are not everything)? Should we be interested in ex ante analysis, ex post analysis, or both (i.e., most studies are ex post, but this has problems)? What about the time dimension (i.e., most studies are cross sectional and consider only a single point in time, whereas adoption is a dynamic process)? How do we explain the extent of CA adopted on a given farm (i.e., most studies only assess adoption versus non-adoption)? When the farmer faces a set of technology choices, how should we model the adoption of a given technology?

Recent analyses address some of these problems cited above but not all of them. For example, Knowler (2005) discusses methods to incorporate nonfinancial constraints in assessing prospects for the adoption of sustainable farming technologies (including CA). He finds that simple trade-off analyses can reveal important information about technology characteristics that may influence adoption by allowing the analyst to eliminate dominated or inferior choices. Duke et al. (2012) used hypothetical scenarios in a discrete choice experiment (DCE) to analyze potential adoption of no-till and several other technologies in Delaware without recourse to an ex post analysis of adopters. Similarly, the dynamic nature of adoption can be assessed using duration modeling developed by engineers to assess failure rates

in durable goods. Here, the rate of adoption is modeled using a regression model that relies on introduced variables to explain the observed pattern. Fuglie and Kascak (2001) used duration analysis to study conservation tillage adoption in the USA and found that adoption and diffusion of these technologies has experienced long lags due to differences in land quality, farm size, farmer education, and regional factors.

The addition of more advanced empirical studies and new perspectives in assessing sustainable farming methods is increasing our understanding of the adoption and diffusion of new technologies. But more can be done, as suggested above. For example, most adoption models consider only the "adopt/no adopt" alternatives and ignore how much area is converted to CA. Double hurdle regression models invoke a two-step nested procedure that can estimate first the probability of adopting, then the area converted to CA. Similarly, most adoption models consider a single technology that is either adopted or not, ignoring cases where farmers have choices. As a solution, a multinomial logit model can be used when the dependent variable is a set of non-ordered options and the farmer's choice from these is regressed against a set of explanatory variables.

Policy and Conservation Agriculture

Conventional Policy Mechanisms to Promote Adoption

Governments around the world, but especially in Europe and North America, have implemented a variety of programs to encourage the adoption of agri-environmental stewardship practices including CA-type practices (see Table 3). Though a variety of mechanisms are available, financial incentives have dominated where conservation is the goal. The rationale for such assistance stems from the perceived and often real divergence between the on-farm and social benefits of conservation.

Assistance can take a variety of forms, such as tax credits on equipment, machine rentals, cost-sharing programs, and direct subsidies. Assistance is most suitable to help overcome significant initial investments and transition costs and in cases where adoption is unprofitable from the individual farm perspective (McNairn and Mitchell 1992; Uri 1998). However, Nowak (1987) suggests that financial assistance may also be important where the adoption of a technology results in positive net returns for farmers. The author argues that institutional support tends to reduce the risk faced by farmers in adopting an "unknown technology" and thereby reduces their need for detailed information prior to adoption (Nowak 1987). That is, to overcome non-adoption because of onerous information demands, state support is useful. This argument is exemplified by Stonehouse and Bohl (1993), who use a model cash crop farm in southwest Ontario to show that a one-time subsidy covering 20 % of outlays would induce a farmer to convert from conventional tillage to no-till.

Instead of merely assessing the impact of one-off interventions for adoption, some analysts have sought to understand how best to promote adoption using a variety of tools in a more targeted way. For example, Uri (1998) identifies a strategy to promote conservation tillage that begins with regional policy makers identifying whether its adoption generally provides a positive or negative net return to potential adopters. Once this uncertainty is addressed, the author recommends education and technical assistance where conservation is profitable but the farmer is not aware of the technology or its profitability, or does not have the skills to

Conservation Agriculture: Farmer Adoption and Policy Issues, Table 3 A summary of policy approaches to promote agri-environmental stewardship including conservation agriculture

Category	Sample approach
Voluntary compliance	Stewardship agreements, education/extension services, research and development, resource centers, etc.
Economic/trade controls	Cross-compliance requirements, export bans, etc.
Financial incentives	Grants/subsidies, tax rebates, etc.
Regulations	Statutes, fines, zoning, taxes, etc.
Direct ownership/management	Public purchase, trusts, etc.

Source: Pierce (1996)

implement it; financial assistance where conservation is not profitable to the individual farmer but would provide substantial public benefits; and regulation and taxes where conservation behavior is required of all farmers, or for those participating in related income support programs (e.g., a cross-compliance measure).

From Government Intervention to Agri-environmental Governance

Alternative policy prescriptions that require less overt or direct state intervention in the agricultural sector have been increasingly identified in the literature. For example, Isham (1999) points out that parallel investment in social capital may help create a sufficiently enabling environment for the adoption of desirable practices, and this may apply strongly in the case of CA. This argument reflects a broader shift in thinking about the role of the state in society. In the agriculture sector, as elsewhere, the role of the state has begun to evolve from one of exercising direct authoritarian control to one of working collaboratively with a diverse array of stakeholders to enable preferred behavior. From a traditionally state-led and technocentric approach to dealing with agri-environmental problems has emerged a more holistic, inclusive, and empowering form of agri-environmental governance. This shift is evidenced in many examples of agri-environmental initiatives wherein participant involvement is no longer mandated from above but rather empowered from below. The Australian Landcare movement serves as a case in point, where complementarities in terms of strengths and capacities of state and community actors are capitalized upon in order to achieve conservation goals on individual properties that create public goods.

In the Canadian context, environmental farm planning has similarly emerged as an alternative approach to achieving collective goals at the individual farm level with modest public transfers. The Environmental Farm Plan (EFP) program began as a pilot project in the early 1990s in the province of Ontario. Developed for farmers by farmers, the EFP program is a voluntary environmental education and awareness program that engages farmers in a self-assessment of environmental performance, including with respect to soil conservation, and seeks to foster a "duty of care" mentality among producers. The EFP program has been applauded on a number of grounds. In addition to enabling farmer participation in devising and implementing solutions to agri-environmental problems, the EFP program has also been extolled for its bottom-up dimension and learning outcomes. As applied to CA adoption more specifically, this approach would see governments work with civil society organizations and peer associations to create a culture of agri-environmental learning, responsibility, and action, with rewards that mix modest financial assistance with peer recognition and praise.

The "Ecological Goods and Services" Concept

Evidently, this bottom-up "duty of care" approach is not universally regarded as the only or even preferred means of enabling enhanced conservation by individual farmers. The last decade of evolving agri-environmental governance has also seen the emergence of the "ecological goods and services" (EG&S) concept, whereby environmental amenities and qualities stewarded by landowners are recast as commodities for trade (Gutman 2007; Engel et al. 2008). The concept clearly reestablishes the public good nature of agri-environmental stewardship: given that individual landowners or "stewards" are expected to bear the responsibility of meeting heightened standards of environmental protection through additional expenditures or foregone development opportunities, primarily for the benefit of society at large, these landowners must be remunerated by society. Setting questions of farmers' "duty of care" aside, there are vexing questions of a pragmatic nature that emerge in considering what to pay landowners for the provision of ecological goods and services. How do we differentiate between private and public benefits? How do we value ecological goods and services?

Notwithstanding these challenges, programs for remunerating landowners for the provision of EG&S are proliferating. In Costa Rica, a nationwide framework of payment for ecological services is supported by the state, in large part through revenues derived from a fossil fuel

sales tax. Payments are available to landowners for the provision of water services, biodiversity conservation services, and carbon sequestration services. In Australia, "conservation tenders" are used to encourage and reward the provision of EG&S by landowners through programs like EcoTender and BushTender. Competitive bids are submitted by landowners to undertake an agreed-upon set of management actions in support of particular stewardship objectives. Throughout the world, there are many other examples of programs that reward landowners for the provision of EG&S: the Conservation Reserve Program (CRP) and the Environmental Quality Incentives Program (EQIP) in the USA, the Environmentally Sensitive Areas (ESA) Scheme and the Countryside Stewardship Scheme (CSS) in the UK, and the CAMPFIRE program in Zimbabwe.

A widely referenced Canadian example of rewarding farmers for the provision of EG&S is the Alternative Land Use Services (ALUS) program piloted in the Regional Municipality of Blanshard in Manitoba and in Norfolk County in Ontario and fully implemented in Prince Edward Island. ALUS is a farmer-driven, fee-for-service approach that offers farmers annual payments for the provisioning and enhancement of EG&S. Payments are based on land rental rates and address four landscape features: wetlands, riparian buffers, natural areas, and ecologically sensitive areas. While still in its early stages, emerging assessments point to the potential value of the ALUS approach in enhancing the flow of EG&S to society and in better recognizing and rewarding farmers for the critical role they play as environmental stewards.

While the viability and endurance of different policy and governance approaches to agri-environmental stewardship generally and conservation agriculture more specifically are open to debate, one thing seems evident: the complexity of the adoption process demands a range of approaches. Moreover, a concerted effort is needed to more thoughtfully consider the complementarities among approaches. In the words of Clark et al. (2007, p. 258), "...we should be wary of the 'one best way' reflex in institutional design." Achieving enhanced conservation agriculture adoption throughout the world will demand ongoing governance innovation among scholars, policy makers, conservation professionals, and the farm community.

Summary

For some years now, various international agencies have promoted a package of soil-enhancing practices under the banner of conservation agriculture (CA), though adoption rates remain low in regions. Many of the associated practices have been employed by farmers and studied by soil scientists for decades. More recently, social scientists have sought to understand the reasons for their adoption (and non-adoption) and the role of government policy in this process. This contribution reviews and synthesizes this area of research to understand better what explains CA adoption and to consider policy implications. The discussion begins with the case for the societal benefits of more sustainable farm technologies such as CA and highlights the arguments for and against this proposition, particularly in the context of smallholders in regions such as Africa. Subsequently, the factors that encourage or inhibit CA adoption are discussed, based on existing studies. A primary finding is that few, if any, universal variables regularly explain the adoption of CA and that efforts to promote CA need to reflect the conditions of particular locales. However, much of this research has not benefited from more advanced statistical and modeling methods, so opportunities for improved analyses in the future are reviewed. Finally, consideration is given to the possibility of enabling CA adoption through targeted policy and broader governance initiatives, most of which reinforce perceived divergences between privately appropriable benefits and societal benefits stemming from an expansion of the area under CA. Whether this perception is justified, enabling further CA adoption globally will require ongoing public contributions, be they in the form of conventional assistance measures or more novel approaches that remunerate landowners for their provision of ecological goods and services (EG&S).

Cross-References

- ▶ Economy of Agriculture and Food
- ▶ Farmer Types and Motivation
- ▶ Sustainability of Food Production and Consumption
- ▶ Water, Food, and Agriculture

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Conventionalization Hypothesis

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Introduction

Organic farming developed rapidly during the 1980s. By the late 1990, some researchers argued that the growth of organic farming had, in spite of its numerous positive consequences, started to lead to undesirable consequences as well

(Buck et al. 1997). These consequences were associated with efforts to incorporate structural elements of conventional agriculture. Scholars worried that in doing so organic farming would change and ultimately lose its alternative character.

Traditional organic agriculture was embedded in a social movement and was even associated with overcoming some traits of capitalist food production, for instance, by emphasizing the social relationship between producer and consumer (decommodification). In contrast Buck et al. (1997) expect the new organic agriculture to be restructured in accordance with the economic imperatives of commodity production. As they put it, agribusiness is entering the field and "finding ways to industrialize organic production" (p. 4). Thus, industrial organic farms introduce methods into organic farming that may follow the legal regulations governing organic farm production, but which are incompatible with organic ideology. Guthman (2004) describes organic mass production as "organic lite." Hall and Mogyorody (2001) summarize the conventionalization scenario as follows: "Organic farming is becoming a slightly modified version of modern conventional agriculture, replicating the same history, resulting in many of the same social, technical and economic characteristics" (p. 399).

The groundbreaking article of Buck et al. (1997) sparked an ongoing debate about the empirical and theoretical validity of the conventionalization hypothesis. During that debate, however, the precise meaning of conventionalization has changed. As elaborated below, there are at least three different meanings: first, conventionalization as originally defined by Buck et al., which refers to macro changes in the political economy of organic agriculture; second, conventionalization of microlevel farming practices and farmers' value base, usually conceptualized as differing attributes of new entrants as opposed to the organic pioneers; and third, conventionalization as a misspecification of modernization processes and consequences of more widespread adoption and diffusion of organic farming.

This entry will first review the conceptualizations of the process termed "conventionalization" and then describe empirical evidence of change in organic production in different countries.

What Is Conventionalization?

Based on an explorative commodity structure analysis of Californian organic agriculture, Buck et al. developed the concept that came to be known as conventionalization. They explicitly linked conventionalization to two important developments in organic farming: Rapid growth and the entry of new market actors: "[E]xplosive growth since the 1980s is both cause and effect of a proliferation of new entrants who are attempting to capture the lucrative niche markets lurking behind organic products and the organic label. Consequently, the field is experiencing rapid changes in production and marketing strategies, and a restructuring of economic imperatives. ... [A]gribusiness is finding ways to industrialize organic production, a process referred to in this paper as 'conventionalization'" (Buck et al. 1997, pp. 3–4). The authors identify trends toward conventionalization in discourse, production, and marketing: The introduction of legal regulation of organic farming, emphasizing inputs over processes, in contrast with certification by grassroots-oriented agencies, encourages the participation of larger corporations interested in investing in organic food. Regarding production there are tendencies toward less diversification, with larger farms specializing in the mass production of a low number of high-profit crops, the increased use of migrant labor, changes in land use, and increased contract growing. Closely linked to the latter point are developments in marketing and distribution, resulting in Buck et al. stating that the industry "is beginning to look most like the conventional one" (p. 16). Here, they argue, power moves in the direction of large retailers. In reaction to these trends, more traditional growers may use coping strategies, such as focusing on direct marketing and

diversification and emphasizing artisanal production. This may ultimately lead to a bifurcation of organic farming, with "deep" organic on one side and industrial "organic lite" on the other side. It must be noted, however, that Buck et al. end their paper with a cautious note that their results may represent "individual cases more than clear trends" (p. 16).

Since Buck et al.'s groundbreaking study, the original definition of conventionalization –agribusiness is finding ways to industrialize organic production – has been frequently discussed, debated, and developed by scholars. For example, Coombs and Campbell (1998) point to the regional grounding of conventionalization theory and note that the "case studies have been extrapolated to form theories of change which have been advanced as universally applicable to organic farming in all capitalist societies" (p. 127). Hence, they question whether the concept provided by Buck et al. can be applied in a meaningful way to other countries with different structures of organic markets and of farming in general. In an influential paper on conventionalization, Hall and Mogyorody (2001) study a number of factors related to farming in Canada, including farm size and specialization, marketing, economic organization, and ideological orientations. They provide an extended operational definition of conventionalization that shifts the level of analysis to the farm(er). Following this operational definition, "conventionalization among producers would be reflected in increases in farm size, changes in the use of marketing channels, and less commitment to organic values and principles" (Padel 2008, p. 64), possibly without the active involvement of agribusiness corporations. This approach captured diffuse concerns shared by many researchers and grassroots activists and paved the way for many empirical studies. At the same time, it diluted the theoretical concept provided by Buck et al. (1997) and changed the meaning of conventionalization.

Padel (2001) interprets these changes in organic farming in connection with Rogers' (1983) adoption and diffusion theory and thereby provides an alternative explanation of the conventionalization process: The fact that new organic farmers differ from the organic pioneers should not be seen as a threat, but rather as a normal outcome of growth and expansion in the adoption and diffusion process. In the light of this theory, the "shift in motives, farm and social characteristics among those converting to organic farming is a typical feature of any diffusion process, and not an inherent shortcoming of those currently converting" (Padel 2001, p. 57). Organic farming organizations and advisors should therefore aim at developing information and support for the new adopters that supports the learning process during and after conversion (see also Padel 2008). Similarly, Darnhofer et al. (2010) call for "a more discerning approach to studying change in organic farming" (p. 71). They note that a farming style that is different from that of the organic pioneers does not necessarily undermine organic principles and that change is inherent in organic farming. While some changes in organic farming should rather be seen as professionalization, conventionalization would need to entail a departure from the principles of organic farming.

Empirical Evidence from Different Countries

There have been a large number of empirical studies designed to test the conventionalization hypothesis. Importantly, the initial article by Buck et al. (1997) was an empirical study that developed the theoretical argument based on an analysis of organic farming in California, USA. Using the method of commodity chain analysis on organic farming in New York, USA, Guptil (2009) finds evidence for conventionalization. Industry actors are oriented toward inputs and commodities rather than processes and systems, and they are able to participate in ways that alter the economic landscape for the whole sector. At the same time Guptil identifies a counter trend as cost-price pressures have motivated some

farmers to develop the alternative model and adopt farming and marketing practices that emphasize self-reliance and local marketing. Based on a case study of Ontario, Canada, Hall and Mogyorody (2001) reject the hypothesis of agribusiness entering the organic sector. They do, however, find a tendency among field-crop farmers toward increased farm size, higher mechanization, and specialization on export-oriented produce.

Coombs and Campbell (1998) find that the penetration of organic farming by corporate actors in New Zealand has not led to a dilution of organic standards, but has caused organic agriculture to evolve in two directions: agribusiness relying on export-oriented production and a domestic market supplied by small-scale growers. Similarly, Lockie and Hapin (2005) find polarization in the economic scale of the Australian organic farming and note that the development concurs with only some aspects of the conventionalization hypothesis. Specifically, their evidence suggests that "there has been no conventional takeover of the Australian organic sector – at least not one that is evident in the thinking of organic newcomers. Newcomers and long-standing organic producers have more in common than the bifurcation concept allows. Indeed, both share the same degree of variability in terms of motivations and in terms of farm structure and scale" (p. 304).

De Wit and Verhoog (2007) study organic farming in the Netherlands. They find that influence of conventional commodity chains is increasing and the use of off-farm inputs is high, suggesting that organic agriculture in the Netherlands shows signs of conventionalization. However, they warn that their study "does not provide conclusive evidence for the conventionalization of [organic agriculture] as a whole" due to a lack of sufficient historical data (p. 460). In a study in Germany, Best (2008) finds that newer farms are more specialized and slightly larger than established ones and that there is a growing proportion of farmers who do not share pro-environmental attitudes. Additionally, a small number of very large, highly specialized farms have recently moved toward organic agriculture. However, the vast majority of organic farmers, new and old ones included, show a strong pro-environmental orientation. Zagata (2010) presents a study of values of organic farmers in the Czech Republic. He identifies three groups among new organic farmers: farmers defining organic farming as a way of life, farmers emphasizing organic farming as an alternative to conventional food production, and farmers seeing organic farming as an occupation. Especially the last group shows some contradictory views, but even in this group, "being organic" is an important part of their self-description. The author emphasizes that business-oriented farmers cannot be seen as conventionalizers and the development of organic farming in the Czech Republic "cannot be reduced to binary categories in terms of a conventionalization thesis" (p. 288).

Evidence from developing countries is limited. Oleofse et al. (2011) report case studies on China, Brazil, and Egypt and find that the newly converted organic farms are business oriented and that their farming systems have not changed substantially during conversion from conventional to organic production. Rather, there is a heavy reliance on input substitution for pest and fertility management. The authors are skeptical about the orientation of the new organic farmers toward agroecology and organic principles. They state, however, that a redesign of the farm system may be a long-term goal for the recently converted farmers and that as of 2011 the organic farmers are not yet embedded in a network of organic producers. Their study provides an interesting contrast to the results of Blanc (2009), who presents a study on organic farming in the rural community of Sao Paulo, Brazil. She observes that there has been rapid growth in the organic sector as well as a broad penetration by actors with strong financial capital. Her assessment of the development of organic farming in the study region is that family farming "may be a way for organic farming to become a development lever for the millions working in Brazilian family agriculture. (. . .) Organic farming has restored perspectives of working and holding on to land for many families" (p. 331). The different findings of Oleofse et al. and Blanc

may be due to that fact that Oleofse et al. study newly organic farms that were isolated and not embedded in networks, whereas Blanc emphasizes collective dynamics, embeddedness, and the complex social process of conversion to organic farming.

Summary

Conventionalization is the idea that features of organic agriculture evolved to mimic those of conventional farming. There are at least three variations on definitions, depending on whether the focus is on macro structure, farm-level micro perspectives, or the adoption and diffusion of organic farming practices.

The empirical evidence on conventionalization is mixed. The most convincing support for conventionalization, as defined by Buck et al. (1997), comes from the USA. This is not surprising, since the concept was developed based on a case study of organic farming in California. In other regions, however, organic farming is embedded in a different institutional structure and, hence, conventionalization is more difficult to identify. Consequently, the concept of "conventionalization" is important for stimulating the discussion of recent changes in organic farming and for increasing the attention for possibly unwanted developments. It does not, however, provide a conclusive explanation for the development in different economic and cultural settings. At least with regard to microlevel farming practices, the adoption and diffusion process seems to provide a much better explanation of the data for most regions.

Cross-References

- Agriculture of the Middle
- Biodynamic Agriculture
- Conservation Agriculture: Farmer Adoption and Policy Issues
- Corporate Farms
- Farmers' Markets
- Farms: Small Versus Large
- Multifunctional Agriculture
- Sustainability of Food Production and Consumption
- Trade Policies and Organic Food

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Cooking Tools and Techniques: Ethical Issues

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Synonyms

Cooking technologies; Ethical considerations of cooking techniques; Ethics of cooking; Philosophical implications of cooking tools

> Cooking is the oldest of all arts: Adam was born hungry, and every new child, almost before he is actually in the world, utters cries which only his wet nurse's breast can quiet. Cooking is also of all the arts the one which has done most to advance our civilization, for the needs of the kitchen were what first taught us to use fire, and it is by fire that man has tamed Nature itself. (Brillat-Savarin 1986, p. 217).

Introduction

Cooking technology is noteworthy for ethics because the means and methods of cooking involve a product that is intended to be eaten. Food, by definition, is something to be ingested, and therefore it is to become part of oneself – part of one's being. This reveals that the ontology of the self and the world are intertwined. While a chair is an object in the world that is (and will always remain) separated from one's being and "not me," food is an object that is "not yet me." Food's ontology embraces the idea of potentiality, for it is not necessarily always going to be separate from me. Food is the potential me.

Cooking technologies enable one to do things that otherwise would be impossible. Were it not for tongs and long forks, grilling would be unthinkable. Oven mitts make handling hot items and vessels possible. Without a knife, one is reduced to ripping, tearing, and biting. Thus, the tools and technologies of cooking reveal the activities concerning food as involving degrees of interaction of the self with a food item. How one chooses to cook, and with what appliances, reveals the attitudes and values one places on the involvement one has with one's food. When we pick up a bratwurst from the grill and turn it over using tongs, we are operating with an extension of our body. We can "touch and feel" the food, and we are involved in the cooking process. When we use a microwave, in contrast, there is a divorce of the self from the process and a retraction of one's self away from the food. The use of these different tools means something. Ultimately, the implications resulting from these situations reach into personal responsibility, for as the being of the individual is extended through the use of a tool (one's arm is extended through the gripping of tongs), so is one's moral accountability also extended.

The ethics of cooking technology/tool use is currently unexplored. It plays out in the arena of human interaction with/through a food-related environment. The tools, techniques, and instrumental methods which mediate (physically, mentally, emotionally) one's involvement with food are of primary importance in understanding the ethical implications of ethics and cooking.

This arena of consideration is full of potential for future scholarship and discussion. Of particular note will be the investigation of the connection between feminist philosophy and cooking technologies. As tool use in the kitchen has become more and more gadget-oriented, it has (ironically) furthered a class distinction based on gender, resulting in the loss of embodied knowledge by female cooks. Rather than liberating women to greater levels of equality, cooking technologies have resulted in the further subjugation of women in the context of the kitchen, for what "they" knew how to do by hand can now be done better by a gadget.

Why Food Matters

Philosophically, "food" is a label attached to the huge world of edible items that are then subclassed into the things one is willing to put in one's mouth and swallow. Said in another way,

while a tremendous amount of the natural world is edible, only a small portion of it is labeled "food." The presumption is that "food" is going to benefit one in terms of physical health, resistance to disease, longevity, and general well-being. It's both an ontological and epistemological label that identifies aspects or manifestations of "being" present in the world that one chooses to incorporate into one's individual "being" and items that are deemed appropriate for that assimilation because of the knowledge had about them.

Humans are very selective regarding what they're willing to eat. Food, as an ontological category, is small and relative to a number of factors, including culture, location, time period, personal history, temperament, physiological disposition, allergies, taste, and mood. Very much in play in determining what is and isn't food is the philosophical idea of "seeing as." Itself a combination of ontology and epistemology, "seeing as" is a way of identifying something as part of one's conceptual framework, and as such, understandable in a particular way. To see something "as" food is to see it as not merely edible, but an edible item appropriate to incorporate into one's own body through one's mouth.

To see food as a physiological need is one-dimensional at best. Food is involved in one's ontology on every conceivable level and arena – food becomes the self physically, but also emotionally, spiritually, and mentally – it has influence in social relationships (family, friends, colleagues, public), political relationships, environmental relationships, and the understanding of one's place in the world. It is difficult to find a situation where food-oriented issues are not relevant. On the most fundamental level, food matters.

Technologies that have to do with one's treatment of food warrant a particular kind of philosophical investigation. That investigation would involve both a careful consideration of the ontological status of food and also great sensitivity to all manners through which the food is treated in its journey to one's body. That examination has yet to be carried out, but it could be, and the intention of this entry is to identify topics that would be involved in that project.

Technology and Ethics

Cooking technology is nestled within the larger arena of technology, and a brief sketch of the history of technology is relevant here. A philosophical understanding of technology focuses on what role it plays in one's life. The locus of this role is not so much on what it is, but on what it does – what is the function of a technology? The primary perspective coming from twentieth-century philosophers is that technology in the form of tools is a means by which one is linked to the world. They are connections and linkages between humans and the so-called "external world."

In serving as a connecting element, tools can be seen as mediating the experience one has with the objects that are not oneself. One of the significant implications of this view is that the mediation involved through technology influences one's understanding and interpretation of reality. One's perception is through the technology – it is through a telescope that one has a "telescopic" view. This perspective (of seeing technology as a mediating tool use), while certainly not the only philosophical understanding of technology, is one of the most helpful for exploring ethics and cooking technologies.

From this perspective, tools and technological objects are extensions of one's body, but also more than that. Technology not only is a way to connect to, with, and through one's environment but, as John Dewey held, is a way of living in and maneuvering through the world. "'Technology' signifies all the intelligent techniques by which the energies of nature and man are directed and used in satisfaction of human needs; it cannot be limited to a few outer and comparatively mechanical forms" (Dewey 1984, p. 270).

Technology and Ethics: Two Camps

The connections between technology and ethics are strong. As David Kaplan states, "All technologies raise implicit ethical questions. Anything humans make and do is subject to ethical evaluation about appropriate uses, acceptable consequences, and right or wrong actions" (Kaplan 2004, p. 169). This being said, there are two

basic camps when it comes to technology and ethics: either one follows the neutrality thesis, where technology is a neutral instrument, offering (in itself) no bias towards positive or negative affect, or one ascribes to the view that all technologies raise ethical questions because they necessarily involve human action and therefore are subject to moral judgment. Kaplan states that "Arguably, technology is itself moral. . . . That would mean that technologies and not just people) are subject to moral evaluation. We could then speak of good-or-bad, right-or-wrong technologies and not just good-or-bad, right-or-wrong human actions" (Kaplan 2004, p. 169).

The distinction could be maintained by considering a wooden spoon. The wooden spoon itself is ethically neutral (for it is simply an object and, on its own, outside of moral consideration), but its use is ethically relevant depending on the context, intention of the user, application, and outcome of using the spoon. While it is debatable whether or not developments in technology, as such, may in themselves embody ethical issues, it is generally accepted that the use of these advances does contain moral and ethical import.

However, this distinction could be seen as simplistic, for it has been argued that technological instruments themselves may embody moral value (Kaplan 2004, p. 169; Verbeek, pp. 232–233). Certainly, technologies direct human behavior and also influence perception of the world. But also, the wooden spoon itself could contain moral elements which would be ethically relevant. The spoon could be seen as a moral object due to what it is made of, where it came from, how it was created, what it is intended for, and how many resources were used in the creation of the spoon.

One of the most influential philosophical views regarding the ethics of technology comes from Martin Heidegger. Heidegger saw technology as a means of understanding. To see it merely as a means to an end is myopic because the ways in which humans intelligently interact with the world cannot be value-free (Heidegger 1977).

For Heidegger, technology is also inherently problematic, for it is a method of transforming, organizing, and systematizing nature in a way that allows one to view it merely as a resource. While that in itself may not be terrible, the danger involved is that if nature can include humans, then one runs the risk of being viewed as a mere resource as well. Further, since there is neither a comprehensive nor a clear understanding of the world and all its intricacies, efforts at control through technology are, at best, guesses. They are unclear and incomplete interpretations. Kaplan states, "The danger of technology (as techne) is that it is a partial and incomplete understanding of being; one that seeks more and more efficiently for its own sake. We interpret everything, including ourselves, as resources to be dealt with as effectively and efficiently as possible" (Kaplan 2004, p. 2).

In the context of cooking, the warnings surrounding technology and efficiency for the sake of efficiency are salient. For example, as the ways in which foods are manufactured and genetically modified to increase not only efficiency in production but also efficacy of taste, the nutritional value of the food often tends to decrease. Further, the regular consumption of hyperefficient foods (notably fast foods) is shown to be detrimental to one's health and thus act counter to the natural purpose of food itself.

Seeing the technologies involved with food production as being value neutral would be naïve, for the result or "product" of the technology becomes incorporated directly into one's being. The being of the other is part of one's future being, and the technological mediation engaged cannot be free of ethical consideration. Food that causes ill health is dangerous and in some contexts could be seen as the result of immoral technology.

One of the strongest linkages between technology and ethics has to do with intent. As long as technology carries with it the activity of design, and design involves intent/purpose, then an element of normativity is involved in the creation and use of technologies. Objects that are created are created for a purpose. As Bruno Latour states, ". . .even without explicit moral reflection, technology design is inherently a moral activity.

By designing artifacts that will inevitably play a mediating role in people's actions and experience, thus helping to shape (moral) decisions and practices, designers "materialize morality"; they are "doing ethics by other means"" (Latour 1999, p. 237).

Latour furthers this idea to claim that the artifacts of technology themselves can contain the moral element of intentionality. Technological mediation, he claims, is a form of intentionality, for ". . .their lack of consciousness does not take away the fact that artifacts can have intentions in the literal sense of the Latin word 'intendere,' which means 'to direct,' 'to direct one's course,' 'to direct one's mind'" (Latour 1999, pp. 232–233).

This view has great implications for cooking and technology, for "doing ethics by other means" implies that the ethics is in the cooking itself. Whether one realizes it or not, one is engaging in moral actions when one cooks, and the moral significance of the act is dependent on which tools are used, how they are used, and why. There would be no such thing as amoral, or morally neutral, cooking.

Cooking Technology and Ethics

When addressing the intersection of cooking, tools, technology, and ethics, a useful goal is to divide types of cooking technologies and tools under common tendencies or characteristics and then investigate the moral implications that arise out of them. A beginning list would include the following:

1. Fire
2. Hand-held linkages
3. Containers and preservation
4. Appliances
5. Fermentation
6. Things one uses to eat "off of" and "with"
7. Kitchen "gadgets"
8. Recipes

Here is a brief consideration of the list. While fire itself isn't a technology, at its most basic level, cooking is a technological control of fire in various manifestations. Further, the control of heat through cooking is arguably the most significant cooking technology in human history.

Cooking tools involve objects that connect the human body to the food throughout the cooking process – things that extend one's hands and reachability. This category includes cutting instruments, sticks/spits, stirring things, spatulas, brushes, and tongs.

Containers and methods used to enclose, segregate, prolong, and preserve one's food all provide an artificial environment for it (even when the elements of that environment are natural). For example, an animal stomach, turtle shell, stone or clay pot, metal bowl, a refrigerator, plastic wrap, and vacuum-sealed bags all provide an environment in which food is held in some state of preservation, suspension, or controlled decay.

The category of appliances includes all machines intended to in some way modify a foodstuff through the application of a form of heat (braise, dry roast, flame, etc.) or physical manipulation. This includes ovens, stoves, grills, toasters, microwaves, bread machines, food processors, blenders, etc.

Related to preservation, fermentation is a "natural" occurring cooking method that can be controlled and augmented by human intervention.

Things used to eat off of/with include all of the instruments used to bring a food item to one's mouth: plates, dinnerware, forks, glasses, spoons, etc.

Somewhere between linkages, containers, and appliances are kitchen gadgets. These are items that are intended to make the food preparation process easier and less dangerous. Items such as choppers, garlic peelers/presses, food mills, and cherry pitters fill this category.

Finally, recipes hold an ontological status similar to a written piece of music. In itself it is not the food (just as the score is not the music), but instead is one of the means through which the product is created, directed, understood, and enjoyed. It may not be necessary, but it is often quite helpful. A recipe also has significance for historical, cultural, religious, and literary consideration.

The categories of fire and appliances are explored below.

Fire

While creating instruments (crude knives, spears, etc.) with the intent to kill an animal in order to eat it is one of the first food-related technologies that most clearly brings ethics into eating, it was cooking itself that had the most impact on humans' moral relationship with food. This is because cooked food opens up the natural world to humans as eaters and presents far more of it (in both plant and animal form) as digestible.

Prior to cooking, humans were limited not only to what could be found and eaten on the spot but also to what was easily digestible: berries, nuts, fruit, and a rather limited amount of protein – most likely in the form of insects. Cooking allowed objects in the world to become more available to humans as eating options, for more grains and plants could become digestible, as well as meats which, prior to the control of fire, had to be eaten raw. Ethically, this opened up two big arenas for humans: energy distribution (and therefore individual direction of human lives and goals) and ontology.

First, regarding energy distribution, prior to cooking, the energy gained through eating was spent primarily on immediate refueling of the energy spent on finding the food. After cooking, eating energy was directed more towards the brain and other functions that were not immediately involved with survival. What cooked food provided was a shift in how humans spent their energy. Whereas a tremendous amount of it was also previously spent on digestion (it takes a lot to process raw food), it could now be freed up for use by the brain (which grew larger) on other projects. Richard Wrangham notes:

> The extra energy gave the first cooks biological advantages. . . . They survived and reproduced better than before. Their genes spread. Their bodies responded by biologically adapting to cooked food, shaped by natural selection to take maximum advantage of the new diet. There were changes in anatomy, physiology, ecology, life history, psychology and society. (Wrangham 2009).

Second, western philosophy has been dealing with a 2000+ year hangover regarding subject/object, self/other, and theory/practice dualisms that boil down to the distinction between the "me" and the "not me." Ontologically speaking, food occupies a unique position in the so-called external world for it is unlike the average rock, tree, clouds, oceans, and even fire. All of these "things" are regarded as the "not me." Food, on the other hand, is something that is, by definition, an object that is going to be assimilated into me, and therefore is the "not yet me."

Food's ontological status is one of potentiality – it is the potential self. The range of objects in the world that one is willing to label as "food" denotes also the range of objects that one is willing to put into one's mouth and accept into one's being. The intimacy of the relationship humans have with food is therefore quite profound, and the ethical implications of what is called "food" are far reaching. The often-quoted line from Jean-Anthelme Brillat-Savarin, "Tell me what you eat, and I shall tell you what you are," points both to the profound meaning in eating and to the fecund moral implications of eating.

With the gain of control over fire and its use, the realm of the "not me" got smaller and the "not yet me" became larger. With the expansion of the category of things now available as food, also came the expansion of the self and of one's identity.

Appliances

The use of cooking appliances reveals levels of interaction and involvement that one is willing to have with food, but also, various appliances highlight epistemological issues regarding the knowledge required to cook in certain ways. Without the knowledge of how to cook something "by hand," there is a reliance on technology in the form of appliances to "do it for us." Thus, it is often found that there is a removal of the self from the cooking situation. This could carry with it an attempted abdication of responsibility. Further, the use of some appliances highlights the "mere product" perspective on food.

Consider the basic differences between making bread by hand and making bread in a bread

machine. There is an embodied, tactile knowledge that comes from kneading bread, baking techniques, utilizing different types of yeast, and so forth. There is also a degree of knowledge that comes from using a bread machine – but it reveals something quite different from making bread by hand. Making bread by hand depicts a continuum of bodily meaning throughout the entire process, culminating in the finished loaf. The bread machine creates the bread without the user of the machine having to know much about what it takes to make bread. The bread machine is a near equivalent to taking the industrial process of making bread, in which one does not participate, right into one's own kitchen. The bread machine reminds one of a disconnection from the process that produces the bread eaten, even as it pretends to connect one to it. The emphasis on "not doing" it ourselves allows one to relinquish responsibility for the food produced. Clearly, even though some individual put all the ingredients into the bread machine and turned it on, the machine "made" the bread, and the resulting bread is not the responsibility of the individual.

Avoiding interactive, tactile bread-making processes such as kneading, rising, punching, and shaping reveals a split between means and ends and places value solely on the ends. The bread machine does not remove one from the cooking context entirely, because cooking is still happening. However, it alters the context such that one is no longer participating directly in the cooking – the cooking is happening without one's involvement. In this case, the bread machine bread is presented primarily as an object of consumption instead of the culmination of an interactive and meaningful process. Albert Borgmann notes that devices that do the work for us have divorced us from meaningful practices involving food and that the experience of dining together has been offset by grazing and "grabbing a bite to eat" (Borgmann 1995, p. 90).

Borgmann points to an important aspect of experience which is being devalued by the use of certain technological advances. The use of something such as the bread machine is not merely an instance of unburdening, efficiency, or convenience. It indicates something much deeper in the experience in that the use of something such as a bread machine does not offer an enriched level of involvement with the process of cooking. There is experience, but it is disconnected or disjointed from the continuum of interactive meaning that comes from engaging one's environment.

One might wish to object to the severity of the above claims by comparing the bread machine and its task to another appliance such as an oven, which itself "cooks" the bread, turkey, potato, or cheesecake. But the oven really only accomplishes one task in the cooking continuum: it heats stuff. The bread machine is different because it is a multitasking appliance that mixes, kneads, controls the rising, and bakes the bread; it does not merely do all the work, it does all the work without the involvement of the skill, technique, or knowledge it takes to make bread. The machine does not have knowledge, it bypasses it. The oven is part of the overall process, the final stage, of baking the bread – which is also something that we cannot do ourselves, thus further distinguishing the use of the oven from the use of the bread machine. The bread machine can be used to bypass the process of making bread almost entirely. Therefore, with the bread machine the emphasis is on the product, and this emphasis becomes morally problematic because the bread machine replaces us and our actions and decisions.

Suggestions for Future Work

> For Dewey, however, tools do not have the last say. Instead, technological innovations tend to rearrange existing alliances, tip balances of power, render some forms of community life obsolete, and encourage the development of others. (Hickman 2001, p. 216).

Technology both keeps up with and drives human culture. The topics to consider and pay attention to as cooking technologies and tools continue to develop are difficult to predict with assurity, but there are some areas which warrant special attention.

Of particular salience is the intersection of gender, cooking practices, equality, and technology. This convergence points to a need for a strong voice from feminist philosophers. This has already begun in the context of technology and gender equality, and the extension of it into cooking practices (and into food and agriculture as a whole) is a logical next step. Corlann Gee Bush has begun this dialogue by showing that societies that have established divisions of labor based upon gender also have differing technological effects on men and women. What happens is that the technologies tend to reinforce patterns of gender inequality already established within that culture (Bush 1983).

For example, "tech fixes" (new, quick, technological advances designed to solve problems, aka, "gadgets"), while superficially useful and morally harmless, ethically backfire in that they perpetuate a class divisions based on epistemological suppression. If groups (based on race or gender) are associated with the traditional tasks that have been "fixed" by the technology, then that class' subjugation is further established.

Underlying the motivation of a tech fix is the idea that technology will provide all the solutions needed to ameliorate one's troubles. So, where there is a widespread inability to utilize a knife in the context of a kitchen for chopping, dicing, etc., there are gadgets (tech fixes) that do the work for you and produce the "exact" same result as though the food were chopped by a home cook who knows how to use a knife. Rather than provide liberation, the tech fix ends up supporting traditional gender inequality (and perhaps make it worse) by further removing the (usually female) cook from the process of cooking and showing that she is intellectually incapable of figuring out how to chop an onion on her own with a knife. She needs an enclosed, plastic chopper to do it for her – all she has to do is hit it.

One could easily see the original encroachment of the tech fix into cooking through the first wave of TV dinners which showed female cooks that machines in factories far away were capable of cooking better, more efficiently, and more conveniently than she was able to do at home.

Summary

This entry provides an overview of some connections between cooking, technology, tool use, and ethics. This intersection has yet to be explored philosophically, and the author highlights several of the salient issues that arise in this context.

Cross-References

- ▶ Agricultural Ethics
- ▶ Brillat-Savarin and Food
- ▶ Cooking, Food Consumption, and Globalization: Ethical Considerations
- ▶ Food Risks
- ▶ Food-Body Relationship
- ▶ Functional Foods as Commodities
- ▶ Recipes
- ▶ You Are What You Eat

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Cooking, Food Consumption, and Globalization: Ethical Considerations

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Synonyms

Circulation; Colonialism; Free trade; Global governance; Imperialism; Internationalism; McDonaldization; Neoliberalism; Transnationalism

Introduction

Globalization refers to the movement of people, things, ideas, and capital across the world as well as the processes and structures that enable this circulation, the ideologies intertwined with it, and the resulting circumstances (Murray 2006; Mittelman 2004). Globalization entails an interdependence that affects many aspects of life for individuals in distant but nevertheless connected locales. A drought in one place may result in a dramatic rise in food prices, the implementation of export restrictions, and the occurrence of riots in other places. Globalization's impact on food production, marketing, distribution, preparation, and consumption abounds with ethical implications. Energy policies, economic subsidies, and other politico-economic factors influence what and how people across the world eat. What consumers in one part of the world purchase, in turn, affects societies that produce foodstuffs for global consumption (Mintz 1985). This introduction describes the globalization of food and agriculture in historical context, while subsequent sections examine ethical implications in greater depth.

Globalization did not begin at any particular time. Human migration across the globe, colonialism, and the spread of neoliberal economic ideas that has occurred since the late 1970s are events that have significantly shaped human interaction across the planet. Important events in the globalization of food that have affected the eating patterns of human societies across the world include the spread of agriculture and domesticated plant and animal varieties across continents and the establishment of major trade routes such as the Silk Road in the second century CE. The Green Revolution, the process by which agricultural production increased exponentially in the mid- to late twentieth century as a result of the development and use of chemical fertilizers and pesticides, F1 hybrid crop varieties, irrigation techniques, and so forth, is another significant event.

Although globalization is not a new phenomenon, the current phase of globalization stands out in terms of the scale, reach, and speed at which movement across great distances takes place. Economists now calculate the daily turnover in financial markets at the scale of trillions of US dollars. Technological developments in transportation, communication, and information technology in the latter part of the twentieth century have led to a world that is more interconnected than ever before, albeit unevenly. International trade has expanded significantly over the past 50 years (Bruinsma 2003). New refrigeration technologies permit many perishable goods to be transported across continents without being frozen or processed.

The current phase of globalization is also notable for the prevalence, influence, and reach of transnational corporations. A-B InBev, for example, is headquartered in Belgium but has a workforce of 100,000 in 30 different countries. Many of its recent Executive Board of Management members have been Brazilian, but there have also been Portuguese, American, and Indian-German members. Its beers – from Budweiser, Beck's, and Stella Artois to Harbin, Brahma, and Bass – hold the number one or two slots in 19 key markets and have captured more than half of the market share in Belgium, nearly half of the US market, three quarters in Argentina, and almost the same percent in Brazil (A-B InBev 2011).

Globalization entails the circulation of capital, goods, individuals, and ideas across the world. Institutions such as the World Trade Organization (WTO), the World Bank, and the International Monetary Fund (IMF) have promoted the liberalization of markets, the creation of

international trade regulations, and the establishment of free trade agreements, though these have encountered opposition from activists and interest groups across the world. The liberalization of labor markets and the free movement of people across the globe have not been promoted in a similar fashion. In spite of this, people move around the world today in increasing numbers, to increasingly distant places, at unprecedented speeds. Many migrants find employment in the food industry, particularly in developed economies. Celebrity chefs like Jamie Oliver, Madhur Jaffrey, and Nobu Matsuhisa have appeal beyond their countries of birth. Less advantaged individuals may work on farms, in meat processing plants, and in kitchens. Tourists also travel across the globe, coming into contact with unfamiliar foodstuffs, dishes, cuisines, and foodways. The term "culinary tourism" refers to the industry that has emerged to cater to those who seek out gastronomic experiences in faraway places. Ideas have circulated the globe along with people, things, and capital. Neoliberal economic policies are especially noteworthy for their recent influence across the globe. The increased interconnectedness of distant locales via new technologies and social media has also made it possible to share knowledge about cooking techniques, management practices, and nutritional information. Globalization has also facilitated the organization of movements like the Christian hunger relief organization Bread for the World, the Worldwide Opportunities on Organic Farms (WWOOF) movement, and anti-WTO protests.

Although globalization has to do with circulation, not all places are equally connected to the flow of people, ideas, things, and capital. Famines, undernourishment, and food deserts are also aspects of globalization. These phenomena demonstrate that globalization is not transforming the globe into a homogeneous and equally resourced place. In the following sections, this entry will examine the ethical implications of the globalization of food and agriculture in terms of contemporary concerns about its impact upon economic systems, human health, cultural diversity, the environment, as well as democracy and the agency of disadvantaged groups.

Economics

Globalization is often equated with neoliberalism – a set of economic beliefs and policy proposals centered on deregulation, privatization, and pared-down state budgets for social programs. At the global level, neoliberalism emphasizes the liberalization of world markets and the implementation of "free trade." In the latter half of the twentieth century, neoliberalism gained popularity with economists and policymakers the world over. A comprehensive transnational agreement eliminating subsidies and tariffs is lacking for agriculture and food. In spite of this, food prices have declined in real terms since the Second World War. In 2008, however, in what analysts and the media have termed a "global food crisis," food prices rose dramatically in much of the developing world, creating a great deal of insecurity and stimulating food riots. As of 2012 prices have stayed high compared with earlier decades. Possible contributing factors include bad harvests for major producers, a reversed trend away from overproduction, and financial speculation in agricultural markets.

There are ethical motivations at the heart of free trade theory. Advocates argue that the liberalization of agricultural markets and the expansion of free trade would result in more efficient economies, savings for taxpayers and consumers, and benefits for countries in the developing world. The Organization for Economic Cooperation and Development (OECD), for example, holds that "simultaneous reform involving a halving of trade protection and domestic support across all sectors could potentially generate USD 44 billion in welfare gains globally. Most of these gains arise from agricultural reform and most of these agricultural gains come from reform of market access measures" (OECD 2006).

One criticism of the world trade system established under the WTO is that it hurts developing economies. Developed economies distribute substantial subsidies to farmers who subsequently "dump" commodities on global markets at artificially low prices with which farmers in developing economies cannot compete. Agricultural trade has grown much more slowly over the past half-century than has the

trade in manufactured goods (Bruinsma 2003). On average, tariffs on agricultural commodities are as high as industrial tariffs were in 1950. As a result, developing countries have become net agricultural importers, with the situation most dramatic in the least developed countries. If current trends hold, the Food and Agriculture Organization (FAO) of the United Nations estimates, by 2030, developing countries will reach a level of net imports of USD 31 billion. FAO analysts deem it probable that developing countries will import greater and greater quantities of food from developed countries while exporting larger amounts of agricultural products such as beverages, fiber, and rubber (Bruinsma 2003).

Ethical criticisms of free trade often focus on exploitative labor practices, wealth disparities, environmental degradation, and other negative conditions that may result from deregulation and trade liberalization. Movements and organizations such as the "trade justice" movement and the international nonprofit organization Fairtrade seek to alleviate harsh and exploitative labor conditions and ensure that more of the money paid for commodities from the developing economies, such as bananas and coffee, may actually reach those who produce them. Focusing on the power of consumer action, the Fairtrade model employs certification and labeling meant to distinguish agricultural and craft goods whose producers receive adequate compensation for labor they perform under conditions that are socially acceptable from those who do not. Today, the Fairtrade foundation is responsible for billions of pounds in sales in the United Kingdom alone. Fairtrade and its model, however, have come under fire for being ineffective, untransparent, deceptive, and even harmful to farmers who do not participate (Griffiths 2012). The ability of consumers to ascertain that their purchases of foodstuffs from distant places contribute positively to the lives of those who produce them is thus questionable.

Health

Globalization has had positive and negative impacts on people's diets, resulting in a range of health consequences. The circulation of foodstuffs, including perishable commodities, across long distances means that many societies today have access to a variety of nutritious foods. Crucially, fruit and vegetable availability has increased since the 1960s across the world (Mendez and Popkin 2004). As a result, nutritional status has improved since the 1960s, with the important exception of sub-Saharan Africa.

While the availability of foods from distant places enables some groups to diversify their diets, it can also threaten local foodways. Those who are less well-off often find they can no longer afford traditional foodstuffs after they have been turned into export crops and may have a difficult time finding acceptable alternatives. Quinoa, for instance, has long served as a source of nutrition for many Bolivians. In the late twentieth century, global demand for the crop surged, primarily because of increased consumption by the North American and European middle class. Though Bolivian farmers' incomes improved as a result, lower-income groups could not sustain prior consumption patterns for this healthy traditional foodstuff because of the degree to which prices had risen.

Recent trends toward dietary convergence show increased consumption of sugar, salt, fat, and vegetable oil, and a decrease in dietary fiber intake (Kennedy et al. 2004). Indeed, the dramatic increase in obesity rates across the world, especially for children and particularly in Pacific Island nations, is believed to be at least in part the result of the tremendous growth in worldwide consumption of processed and high-calorie-content foods, including fast-food chicken, instant ramen, and soft drinks (World Health Organization Regional Office for the Western Pacific 2002; Sobal and MacIntosh 2009). This is worrisome considering links between obesity and high rates of heart disease, diabetes, hypertension, and other health complications, as well as the complexity of addressing the double burden of both undernourishment and overnourishment in developing countries. The World Health Organization has proclaimed a global obesity epidemic and along with state governments, and nongovernmental organizations,

and other international institutions, it is attempting to address the problem.

The flow of food and knowledge across the world does not reach all people in the same ways. Many multinational organizations and nongovernmental organizations work globally to spread nutritional knowledge – from the benefits of breastfeeding to notions of a "balanced" diet, alleviate food crises, and prevent future ones from occurring. Yet hunger and undernourishment persist despite sufficient global food production (Sen 1981). Famines have social causes as well as environmental and economic ones and increasing production will not eradicate famines or undernutrition. Indeed, global food production measures approximately four billion tons, but the FAO calculates that about a third of that food is never consumed (Gustavsson et al. 2011). "Food loss" refers to the decrease in food mass that occurs during the stages of agricultural production, postharvest handling, storage, and processing. "Food waste," meanwhile, is applied to similar losses that take place during distribution, retail, and finally individual and group consumption. As these definitions indicate, food loss and waste occur at every point in the food supply chain. The FAO estimates a level of annual per capita food loss and waste of 6–11 kg of food in sub-Saharan Africa and South and Southeast Asian countries, in contrast to a much higher level of 95–115 kg in Europe and North America. Overconsumption may also be categorized as food waste that has negative repercussions for human health and the human ecological footprint (Blair and Sobal 2006). The inequalities perpetuated in the global food system are striking when one considers that 870 million people are chronically undernourished while billions of tons of food goes unconsumed and many individuals consume far more food than their bodies require (FAO, WFP and IFAD 2012).

Culture

Culture permeates every aspect of the global food supply chain. Even the forging of global agreements concerning food safety via international institutions is complicated by cultural differences over how a food product's safety is determined and to what extent items such as unpasteurized cheese, hormones in meat, and genetically modified (GM) foods can be deemed safe (Korthals 2004). One ethical concern evident in discussions about the globalization of food, cooking, and cuisine is that the contemporary processes of globalization are replacing the world's vast food cultures with a heterogeneous food culture originating in the West and in particular the United States. The term "McDonaldization" is often used to represent this perspective (Ritzer 1993). Indeed, the Slow Food movement was catalyzed by the construction of a McDonald's near the Spanish Steps in Rome. French farmer Jose Bove grabbed global headlines when, as a sign of protest against globalization, he led a movement to take a McDonald's apart before it could open. The argument that mainstream American culture – epitomized by McDonald's – is engaging in a kind of cultural imperialism is of ethical concern because it highlights threats to the agency and self-determination of disadvantaged groups (see section below on Democracy and Agency) and decreases in the richness of human cultural diversity. While American corporations such as McDonald's, Doctor's Associates, and Yum! Foods do dominate the global market for fast food in terms of market share, they are not necessarily engines of cultural homogeneity. Indeed, McDonald's franchises adapt to the places they are situated. Thus, McDonald's franchises in Mumbai, Kyoto, Santa Monica, Paris, and Moscow vary considerably in terms of menu, store design, and how customers use them (Watson 2006). The international spread of fast-food ventures is also not a simple cultural shift but related to factors that include trends such as urbanization and women working outside of the domestic sphere.

The circulation of foods across the globe has never been a unidirectional process (Plotnicov and Scaglion 1999). For instance, the establishment of trade routes and colonies that followed explorer Christopher Columbus's arrival in the Caribbean spurred the movement of people, plants, animals, diseases, and ideas across

continents. This transformational event has been called the "Columbian exchange" (Crosby 1972). Though neither free nor fair, these exchanges brought cattle, citrus, and wheat to the Americas and corn, potatoes, and tomatoes to Europe. Spicy Korean cuisine, Italian marinara sauce, and Colombian coffee did not exist prior to this event.

The diffusion of foodstuffs, dishes, and cuisines has also been evident in more recent years. Dishes such as curry, fried rice, French fries, pizza, sushi, guacamole, and croissants are now commonly found in many countries. Water is bottled, branded, transported across the world, and consumed in places with abundant resources of their own. Restaurant menus as well as domestic fare demonstrate an international influence and a tendency toward adaptation and creolization.

Though globalization has not resulted in a uniform cuisine, certain trends have had a great deal of influence upon foodways across the globe. In the recent phase of globalization, the image of a "modern" city is one that is cosmopolitan enough for residents to eat in Ethiopian and Vietnamese restaurants, shop in Mexican and Chinese grocery stores, and browse in bookstores that carry Indian and Spanish cookbooks. Elites eat luxury foods like vintage wines, caviar, Kobe beef, and French cuisine, develop a familiarity with various "ethnic" cuisines, and adopt self-imposed food restrictions as in veganism, locavorism, or special diets. Markers of status such as these are sought after and derive their value directly from the difficulty required to obtain them, clear indications of inequalities in the global food system.

Technological advances in communication have facilitated the emergence of organizations like Slow Food International that have had a great deal of influence on the global discourse of food, cuisine, and ethics. Founded in Rome, Italy, in the late 1980s, Slow Food now claims to have 100,000 members in over 150 countries. Its aims include the safeguarding of local agricultural and culinary traditions and the promotion of sustainable farming. Critics of the Slow Food movement view it as elitist, antiscientific, anti-change, and ignorant of the challenges involved in producing and preparing food to feed whole societies.

As migrants and tourists move across the globe, individuals and societies experience culinary traditions new to them. Such interaction can generate an understanding of specific food cultures and form the basis for respecting cultural differences. Though culinary tourism and the consumption of "ethnic" foods appear to sustain traditional foodways, they also engender change. New standards for what is authentic and what is desirable are established, with tourists and foreign food experts often imposing their judgments and consequently altering local food culture in the process. Although Asian cuisines have gained a great deal of popularity in recent years, for instance, whale meat and dog meat have been met with disapproval from many tourists and travelers and are now consumed far less frequently than they once were.

The Environment

One consequence of the dietary convergence that has accompanied globalization has been a loss of biodiversity. Rice, wheat, and maize have become the dominant grains, though the varieties of even these crops have also decreased. The decrease in global biodiversity is also the result of climate change, habitat change, the introduction of invasive species, overexploitation, and pollution, which all may be linked to globalization as well. The overexploitation of natural resources including marine fisheries continues to threaten global biodiversity (Bodiguel et al. 2009). Decreases in biodiversity render areas engaged in large-scale monocropping vulnerable when unfavorable ecological conditions, from drought to pestilence, develop. They can also negatively impact the health of local societies and cause cultural, economic, and social dislocation. The mid-nineteenth century Irish Potato Famine is a stark example of this.

Neoliberal economists and many state actors promote an industrial agricultural model characterized by large-scale monocropping. Such

agriculture is fuel dependent and releases greenhouse gases (GHGs) into the atmosphere, contributing to global climate change. Importantly, the countries responsible for the largest GHG emissions are not those that suffer the consequences the most. Thus, although the United States and the People's Republic of China release the greatest amounts of GHGs, it is nations such as Kiribati and the Marshall Islands that experience existential threats as a result. The purchase of industrial agricultural foodstuffs sustains such a model and contributes to the human ecological footprint. Food travels great distances – often thousands of kilometers – before it reaches consumers and a food item's provenance is easier to identify than the environmental impact involved in producing and transporting it. In this context, the notion of "food miles," the measurement of the distance a food has traveled from place of production to the place the consumer procures it, is used to index its environmental impact and specifically the greenhouse gas emissions accrued throughout the supply chain. Calculating the contribution of discrete consumer purchases to the climate footprint in "food miles" has generated criticism because it omits the much greater amount of GHG emissions related to food production, resulting in a misleading view that foods that are produced locally have less impact upon the environment than those transported from more distant places (Weber and Matthews 2008). Consumers purchasing food on the basis of "food miles" may not only misunderstand the extent of their food's climate footprint, but by declining to buy foodstuffs that have traveled great distances, they may actually hurt producers in developing countries that are low emitters of greenhouse gases.

Large-scale farming for global markets may also contribute to environmental destruction that exacerbates other problems. This is the case with shrimp farming in places such as Thailand and India. Though they provide employment and bring economic benefits to the areas where they are located, shrimp farms are linked to pollution, the cutting off of communities from access to local resources, and the destruction of mangroves, which leaves local populations more vulnerable to natural disasters like tsunamis and cyclones.

While the negative environmental consequences of the globalization of food are prominent, there have also been positive ecological developments that are linked to globalization. The sense of global awareness of transnational environmental problems such as climate change and the participation of state and non-state actors (including civil society) in trying to come up with measures – from treaties to new technologies – to address them is one positive development. The recent popularity of self-consciously "organic" farming and its products is one movement worth noting, though the term has been criticized for being ill-defined, used in ways that both lack transparency and established international standards.

"Local" food movements have emerged across the globe often as a reaction against the negative aspects of a global food system. Yet these are also a result of the processes of globalization that facilitate the flow of knowledge about food systems, the ideals behind local food movements, and the various means of creating localized food systems. These movements include community-supported agriculture (CSA) groups, areas seeking to be food self-sufficient, and farmers' markets and other means whereby farmers sell their products directly to consumers. Critics of local food movements identify xenophobic tendencies and the creation of boundaries that can have negative consequences for those excluded. Because what is considered "local" is not defined in many instances, the term is susceptible to overuse by marketers, resulting in a situation whereby local agriculture neither necessarily refers to a specific proximity between producers and consumers nor entails the implementation of environmentally sustainable practices.

Democracy and Agency

Another topic critical to the global discourse on ethics and the globalization of agriculture and food concerns the ability of each society to

determine its position vis-à-vis the world at large. This is evident in relation to the land acquisitions that some states have pursued in less-developed countries so that they can export agricultural commodities and secure their own domestic food supplies. Critics of such projects have called them "land grabs," arguing that many of these less-developed countries experience undernutrition and receive aid from the World Food Programme. Some researchers have accused countries of causing famines by engaging in such land acquisitions.

The concept of "food sovereignty" has emerged as a challenge to neoliberal policies to food and agriculture, phenomena such as "land grabs," and notions of "food security" that emphasize decision making by state elites, advancements in agricultural production, and the role of large corporations (Carney 2011). "Food sovereignty" is said to be the right that peoples and countries have to food and to determining how they will produce or obtain food in ways that meet their nutritional, ecological, social, economic, and cultural needs. It is deemed a violation of food sovereignty when an international institution or a foreign government coerces a state to open its borders to imports of commodities and food products. Proponents of "food sovereignty" are concerned that the liberalization of trade threatens domestic agricultural sectors, the livelihood of farming households, human health, and the stability of rural areas. Another objection is that food imports may include products such as genetically modified crops that may be socially undesirable but may not be identified as such in labeling. Food sovereignty advocates also emphasize the inequality inherent in a system that enables developed countries to export agricultural products at much cheaper prices because of subsidies and price distortions. As a result, they believe that societies should be able to determine their own policies without pressure from international institutions, powerful state actors, or domestic governments pursuing individual or political agendas at the expense of disadvantaged minorities. Critics find "food sovereignty," however, to be open to interpretation, easily manipulable by elites, and difficult to gauge (Carney 2011).

Summary

Globalization is comprised of processes whereby people, things, ideas, and capital move across the globe. It does not have a definite starting point and its future mutations and consequences have yet to be determined. Contemporary ethical debates about the globalization of food largely relate to economic, cultural, health, and environmental concerns, as well those related to agency and democracy. As state and non-state actors as well as global civil society take measures to address the negative impacts of globalization and expand upon the benefits, new manifestations of globalization will emerge. Consumption has ethical implications, but the larger consequences of particular consumption patterns are not always clear. The global food system lacks transparency, traceability, and accountability, leaving consumers to make decisions based on the incomplete and sometimes distorted information available to them.

Cross-References

- Culinary Tourism
- Economy of Agriculture and Food
- Extraterritorial Obligations of States and the Right to Food
- Fair Trade in Food and Agricultural Products
- Food and Agricultural Trade and National Sovereignty
- Food Security and International Trade
- Slow Food
- Sustainability of Food Production and Consumption

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Corporate Farms

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Synonyms

Agribusiness; Farm incorporation; Industrialized farms; Large-scale farms

Introduction

Public concern about the consequences of "corporate" farms dates back to the early 1900s. While corporate farming has a technical or legal meaning about the form of business organization and ownership of farms, the term is usually used more broadly to refer to large-scale industrialized farms. Numerous studies raise the ethical issues about large-scale industrialized farms. One of the central concerns is the potential for these farms to have detrimental impacts on community life.

This entry provides an overview of the literature addressing the attributes and impacts of large-scale industrialized or "corporate" farms. It discusses the technical meaning versus popular usage of "corporate farms" and the manner by which scholarly research has conceptualized these farms. It also summarizes the many decades of research that has investigated the relationship between industrialized farming and public well-being. Extant research demonstrates a number of lines along which scholars have voiced concerns about industrialized farming. Finally, factors that might mitigate potential detrimental effects of industrialized farms are discussed.

Corporate Farms: Technical Definitions, Customary Conceptualizations, and Measures

Corporate farms are defined and studied in at least three ways, each one broadening upon the other. First, there are technical or legal definitions of these farms. As businesses, farms are classified by the form of business organization that the owners select on the basis of tax benefits and liability protection. Corporations are distinguished from typical small businesses organized as sole proprietorships, general partnerships, and other partnerships with various limited liability protections for owners. Goforth (2002) explains the legal differences between these different forms of organizing farms as businesses. Corporations are formed by filing articles of incorporation or corporate charters with state government. Farm corporations have built-in formalities such as by-laws governing daily operations, relatively rigid management structures, and shareholders with voting rights that must approve organizational transactions such as dissolution and mergers. Shareholders do not have liability for losses of the corporation and are not entitled to report any loss on their personal taxes as a result of losses at the corporate level.

Various federal agencies collect data on corporate farms. The Agricultural Resource Management Survey conducted by the US Department of Agriculture shows that 3 % of farms were incorporated in 2010, and they account for 21.6 % of total US farm sales (McDonald 2012). But the vast majority of these corporate farms (2.6 % of the total number of farms) are considered family owned with the majority of the shareholders being blood-related family members. Only 0.04 % of US farms are nonfamily owned corporations. The proportion of nonfamily held incorporated farms has grown little over the past several decades (Lobao and Meyer 2001). The minuscule number of nonfamily relative to family corporations contrasts with the popular perception about corporate farming. It further suggests that ethical issues raised by legal incorporation per se are limited: most farms that are incorporated are done so to help families manage the operation and because of interests in estate planning, assurance of business continuity, limited liability, and potential tax advantages. The family criterion is important because it often forms some type of basis for corporate farm restrictions in different state laws.

A second conceptualization can be seen in the definitions used by states that have enacted corporate farming laws. These laws go beyond addressing whether or not a farm is an incorporated business. They are statutory or constitutional provisions limiting the power of corporations to engage in farming or agricultural production-related processes and to obtain land that is or could be used for agricultural production. Pittman (2004) provides a summary of these laws often called "anticorporate" farming laws. Varying by state, these laws involve criteria such as the number of and relationship among the shareholders, whether a family member "actually" conducts farming operations, and whether shareholders reside or work on the farm. Nine Midwestern states have these laws in place. They often provide exemptions for nonprofit entities who own farms and for corporations who entered farming prior to the passage of any anticorporate farming act. These laws are established in the attempt to reduce the potential negative impacts of absentee-owned, large-scale farming on communities and the public at large and to protect family farmers from oligopolistic agribusiness.

The third conceptualization, the one most frequently assumed in the popular literature, is the use of the term corporate farms as synonymous with industrialized farms. As explained above, most "corporate farms" are in fact family owned and operated farms – hence, as a term, "corporate farming" is a misnomer. But the broader industrialization of farming has been of extensive concern to researchers due to the potential for detrimental effects on the public well-being. Hence, ethical issues raised by "corporate farms" should be subsumed under the more general question of the industrialization of farming.

The industrialization of farming refers to the transformation whereby farms have become larger scale, declined in number, and integrated

more directly into production and marketing relationships with processors through vertical or contractual integration (Drabenstott and Smith 1996: p. 4). The industrialization of farming is often contrasted with the relative decline of traditional, moderate size family farming. Extensive research explains how farms have changed historically and the evolving patterns of farm size and structure (Buttel 2001; Lobao and Meyer 2001). Farming is often described as a dualistic system, composed of a few large farms with expanding market shares and many small farms that cannot sustain families. Over time, moderate size farms have been edged out of agriculture. Scale, measured in farm sales, is usually used as a measure of farm size. Very large farms (those with annual sales of over one-half million dollars per year) make up only 5 % of all farms, but they account for more than half (53.7 %) of total agricultural sales (Hoppe and Banker 2010: p. v). These very large farms have a median size of 1,062 acres as compared to the median for all US farms, 88 acres (Hoppe and Banker 2010: p. 8).

Accompanying the growth of scale of operations are organizational changes. These include an increase in the relative proportion of hired to family labor as well as greater use of incorporation as a form of legal organization, discussed above. Another organizational shift is the movement toward a more integrated industry from farm to grocery; this occurs through "contract production" and vertical integration that links farmers, food processors, seed companies, and other agribusiness (Barkema and Drabenstott 1996: p. 64). Vertical integration refers to operation of farms by firms that also operate in at least one other stage of the food chain, such as input supply, processing, and marketing. Examples of vertically integrated firms are large livestock producer/processor enterprises, such as Tyson. In addition to their direct involvement in farm production, agribusiness firms contract with farmers for goods and services. About 10 % of farms operate under marking or production contracts with agribusiness corporations (Hoppe and Banker 2010: p. 38). Marketing contracts are used by independent operators to reduce exposure to market price swings; these contracts stipulate a commodity price or pricing mechanism for delivered goods and are used mainly for crop and dairy commodities. Production contracts involve cost sharing arrangements and/or payment for operators' services usually for hogs, poultry, and other livestock production except dairying. Production contracts extend agribusiness firms into direct farm production using the vehicle of the local farmer. In sum, agribusiness firms, depending on corporate strategy, may enter farming through direct operation of their own units and/or through employing local farmers to participate in production homework.

In classifying farms as "industrialized" or "family," researchers distinguish between the construct (an ideal-type concept) and its actual measurement (variables used to define the concept in practice). When social scientists refer to "industrialized" farms, they invariably are referring to both scale and organizational characteristics of the farm unit. In general, but not always, scale coincides with organization. That is, large-scale farms (relative to smaller or family farms) are more dependent on hired labor and managers and more likely to have absentee owners, to be incorporated, and to be vertically integrated with agribusiness. By contrast, family farming as an "ideal type" is usually conceptualized as an enterprise where the family unit owns a majority of property, makes managerial decisions, and provides the bulk of labor.

In terms of measurement, social scientists measure industrialized farming by both scale and organizational variables. Scale is usually measured by sales but sometimes by acreage and real estate and for livestock operations, animal inventory. The actual dollar value for scale indicators used by analysts to indicate a "large-scale" farm will obviously vary by the time period of study, by regional context, and by commodity. Organizational measures of industrialized farming include vertical integration of corporations into farming; production contract farming arrangements; absentee ownership of production factors; dependency on hired labor; operation by farm managers, as opposed to material operation by family members; and legal status as a corporation (family or nonfamily). But in

practice, social scientists focus most on farm scale (sales) and use it as a general proxy measure to classify farms because it is simple, clear, and often correlated with organizational characteristics of units. In 2010, USDA categorized farms with over $250,000 in annual sales as "large" farms and those with $500,000 or more in annual sales as "very large" farms (Hoppe and Banker 2010).

Concerns About Public Well-Being

Numerous ethical concerns are raised about the potential for negative impacts on society due to the industrialization of farming, both globally and within the United States. The degree to which these concerns are warranted depends on the particular empirical case, including national and community context. Noted below are general issues that apply across nations and particularly developing nations. More detailed attention is then given to the US case.

Across Nations and the Developing World

Across nations, researchers have raised concerns about the industrialization of farming on public well-being. Farming systems globally are inherently uneven in their effects, conferring different costs and benefits across regions, communities, and social classes. Larger and fewer farms reduce the aggregate farm population within nations and alter farm and rural community class structure (Barret et al. 2010). In contrast to assumptions that rural areas initially fall behind in well-being as farming becomes industrialized but later catch up to urban areas in income and employment over time, cumulative, uneven development may occur. That is, rural communities or regions may suffer long-term outmigration and persistent poverty, never fully recovering.

More broadly, some researchers see the industrialization of agriculture as symptomatic of broader and largely negative changes in the global food system. McMichael (2012) articulates this concern well. He explains how the power of capitalist elites, multinational corporations, and governments' acquiescence are leading to the development of a neoliberal food regime that unfolds across nations. The neoliberal food regime jeopardizes public well-being through escalating past trends toward multinational corporations' control of the global food supply. It raises profound questions within nations about agribusiness concentration, consumer health, food safety, and general sustainability of ecosystems. However, the most immediate effects of industrialized farms are on the day-to-day lives of people residing in the places where these farms are located. It is also at this level where social scientists have conducted a great deal of research over a long period of time.

For developing nations, the industrialization of farming has raised a series of specific concerns. A useful summary is provided by Schaeffer (1997). He denotes the following issues. Industrialization of agriculture creates a movement from subsistence farming to export agriculture. It may reduce domestic supply of staple food commodities. Periodic food shortages or even famine may occur as food prices rise. Farmers themselves become increasingly cash dependent and more prone to debt crisis as they seek to maintain households and expand operations in order to compete. Rural class structure undergoes change. Smaller farmers may become displaced, and there may be a rise in landlessness. Overall, economic inequality among the rural population tends to grow. As large-scale farming expands, habitats may be destroyed, and general environmental degradation may occur. Gender inequality in farming also occurs. Perhaps the most detrimental effects have been in sub-Saharan Africa where women who were once direct food producers tend to be displaced disproportionately from this role as land is commodified and sold. Industrialized farms also tend to recruit gender-specific labor forces. Men usually have the first new opportunities for employment on these farms, while women may have reduced access to land and earning opportunities. In regions where household income is not pooled, such as much of sub-Saharan Africa, children and women may have health, nutritional, and other problems as mothers lack access to income to provide for their families.

The Case of the United States

Public concern about the industrialized farming in the United States began in the 1920s–1930s. Boles and Rupnow (1979: p. 471) note that during this period, concern centered on the potential negative effect of mechanization, foreclosure of farm land mortgages held by corporations, and corporate monopoly of land. Since that time, much of the concern has been directed to the impacts of industrialized farm on communities.

The classic study which gave rise to modern research concerned with the ethics of industrialized farming was conducted by Walter Goldschmidt, an anthropologist working with the US Department of Agriculture. In the late 1930s–early 1940s, he conducted a research project on the effects of industrialized farming using a matched pair of two California communities, Arvin, where large, absentee-owned, nonfamily operated farms were more numerous, and Dinuba, where locally owned, family operated farms were more numerous. The purpose of the study was to assess the consequences of a California law with a provision placing acreage limitations on large farms located in California's Central Valley, so as to support family size farms in the region. Goldschmidt (1978: p. 458) notes that "Large landholders throughout the state and corporate interests generally opposed this provision while diverse church and other agrarian-oriented interests wanted this law applied to California. The comparative study of Arvin and Dinuba. . .was designed to determine the social consequences that might be anticipated for rural communities if the established law was applied or rescinded." Goldschmidt (1978) systematically documented the relationship between large-scale farming and its adverse consequences for a variety of community quality of life indicators. He found that, relative to the family farming community, Arvin's population had a small middle class and high proportion of hired workers. Family incomes were lower and poverty was higher. There were poorer quality schools and public services, fewer churches, civic organizations, and retail establishments. Arvin's residents also had less local control over public decisions, or "lack of democratic decision-making," as local government was prone to influence by outside agribusiness interests. By contrast, family farming Dinuba had a larger middle class, better socioeconomic conditions, high community stability, and civic participation. Goldschmidt's initial research report, made public in the early 1940s, angered large farmers. It was first silenced by USDA and then burned publicly in California along with John Steinbeck's *Grape of Wrath*. Not until 1978 was it made widely available to the public, published in book form.

As the structure of US agriculture has evolved toward larger and fewer farms, government and academic researchers have continued to investigate the extent to which large-scale, nonfamily owned and operated industrialized farms adversely affect communities. Congress has conducted inquiries, such as that by Senate Subcommittee on Monopoly dealing with Corporate Secrecy and Agribusiness, in which rural sociologists and agricultural economists provided testimony in 1973 about the dangers to communities posed by increasing corporate control of agriculture (Boles and Rupnow 1979: pp. 468–469). The Office of Technology Assessment (OTA), concerned that the relative growth of large-scale industrialized farms might have adverse impacts on communities, commissioned a series of research papers on the topic. The OTA research came as a request from the Congress and was eventually published as a book by Swanson (1988). In the 1990s, public concern with industrialized farming began to be directed particularly on large integrated livestock producer/processor enterprises and to the issue of production contracts. Lobao and Stofferhan (2008) document four generations of work that have addressed the impacts of industrialized farming on communities, starting from Goldschmidt's qualitative work. This was followed by extensive quantitative research in the 1970s–1980s, revisionary work from the 1990s onward, and the most recent work focused on confined animal feeding operations (CAFOs).

The public concerns that industrialized farms raise are documented by Lobao and Stofferhan (2008) through a meta-analysis of 56 studies spanning over five decades of research. They classify

the results of studies by the outcomes found, denoting three types of impacts. Socioeconomic well-being is most frequently studied: typical indicators are standard measures of economic performance such as employment growth, income levels and growth, and broader distributional conditions (poverty rates and income inequality). Community social fabric refers to social organizational features that reflect community stability and quality of social life. Indicators include population change, social disruption indicators (e.g., crime rates, births-to-teenagers, social-psychological stress, community conflict, and interference with enjoyment of property), educational attainments and schooling quality, health status, and civic participation (e.g., voluntary organizations and voting). Environmental indicators include quality of water, soil, and air, and health-related conditions.

Out of the total 56 studies analyzed, Lobao and Stofferhan (2008) concluded that largely detrimental impacts with regard to large-scale, industrialized farms were found in 82 % (32) of the studies, some detrimental impacts were found in 14, and no evidence of detrimental impacts were found in 10. Such relative consistency continues to lead to the working hypothesis that industrialized farming jeopardizes well-being. Detrimental impacts are found across different measures of socioeconomic, social fabric, and environmental well-being and throughout regions of the country. Some examples of community quality of life that have been found to be adversely affected by industrialized farms are noted below:

Socioeconomic well-being. (1) Lower relative incomes for certain segments of a community: greater income inequality (income polarization between affluent and poor) and greater poverty, (2) Higher unemployment rates, (3) Lower total community employment generated relative to family farms.

Social fabric. (1) Population: decline in local population size where family farms are replaced by industrialized farms and smaller population sustained by industrialized farms relative to family farms. (2) Class composition: rural social class structure becomes poorer (increases in hired labor). (3) Social disruption: increases in crime rates and civil suits and general increases in social conflict and increased stress or social-psychological problems among a community. (4) Civic participation: deterioration in community organizations and in less citizen involvement in social life. (5) Quality of local governance: less democratic political decision-making; public becomes less involved in local government as outside agribusiness increases its control over local decision-making. (6) Community services: fewer or poorer quality public services. (7) Retail trade: decreased retail trade and fewer, less diverse retail outlets. (8) Reduced enjoyment of property: deterioration of landscape and odor in communities with CAFOs. (9) Health problems: neighbors of CAFOs report upper respiratory, digestive tract disorder, and eye problems. (10) Real estate values: residences closest to CAFOs experience declining values relative to those more distant.

Environment. (1). Ecosystem strains: depletion of water and other energy resources. (2). With regard to CAFOs: safe-drinking law water violations, air quality problems, and increased risks of nutrient overload in soils.

In addition to the general issue of industrialized farms, specific concerns have been raised about production contracts, which as discussed above involve cost sharing or payments by agribusiness for operators' services such as in hogs and poultry production. First, production contracts are thought to alter agrarian social structure by creating a segment of farmers who are the structural equivalent of factory production homeworkers. Such contracts erode formally independent operators' autonomy in direct production, farm decision-making, and control over assets. Concern is also with the general well-being of contractees (operators) and their families given their asymmetrical relationship in bargaining power with agribusiness firms. There is an inherent structural imbalance in contract farming, and the degree to which this imbalance is manifest varies by specific contract arrangements. Ideally, production contracts are used to share risks and costs of production between contractee and contractor. But in practice, the bargaining power of external agribusiness is

likely to result in a greater of share of risks and costs of production borne by contractees and their families.

Public Policy and Other Factors to Promote Well-Being

Researchers have long questioned the degree to which public policy can be a mechanism for reducing the potential negative impacts of industrialized farming. For developing nations, researchers have often denoted the positive role appropriate agricultural policy can play in improving economic performance and alleviating rural poverty (Barrett et al. 2010). By contrast, in the United States, the limits and problems with farm programs are stressed. Analysts tend to see farm programs as contributing to the growth of industrialized farms (Winders 2009). While 61 % of farmers receive no government payments (largely due to the commodities that are raised), for those that do, the largest farmers reap greater benefits, even though payments are capped for the largest farms (Hoppe and Banker 2010: p. 33). Researchers charge farm programs with contributing to rising land values and reducing the risks of farming which over time promotes the growth of larger and fewer farms (Browne et al. 1992).

There is some evidence however that public policy in terms of state laws can help. Welsh (2009) reports states that regulating corporate involvement in farming with "anticorporate farming laws" tend to have more robust family farm sectors. Industrialized farming is less likely to have negative impacts in farm-dependent areas in these states. He notes also that state regulations that enhance the bargaining power of farmers with processors in terms of increasing prices and other aspects of agribusiness contracts also should improve the conditions of farmers and communities.

If the goal is to improve the lives of rural people overall, researchers note that nonfarm programs are far more effective than farm programs. Farm programs tend to subsidize property owners, as opposed to the mass of rural people (Brown et al. 1992). Further, farm households overall have higher median incomes than US nonfarm households (Hoppe and Banker 2010). Income transfers, food stamps, and other forms of federal intervention are beneficial to reducing poverty among needy rural people including farm labor.

Finally, researchers have identified general community attributes that may mitigate the potential for detrimental impact of industrialized farms. Stronger civic society, better quality nonfarm industries and firms paying higher wages, and a political-institutional environment that supports the workforce in general such as through support for unionized labor, higher minimum wages, and adequate public assistance tend to raise the well-being of all workers in a community. These same factors are likely to buffer the potential effects of industrialized farms (Lobao 1990; Welsh 2009).

Summary

The term "corporate farm," while popularly used, is better understood as the industrialization of farming and growth of large-scale farms. In the United States, the vast majority of corporate farms are owned by families, and farm incorporation per se raises little in the way of inherent ethical issues. Rather, the industrialization of farming has been of concern to public well-being across the globe and has been studied in a vast scholarly literature. In a review of 56 studies, Lobao and Stofferhan (2008) found that in over 80 % of these studies, the authors reached conclusions that industrialized farms had largely detrimental impacts. These studies reported three sets of detrimental outcomes on socioeconomic well-being, social fabric or stability of community life, and environmental problems. Such relative consistency in findings continues to lead to ethical concerns and the longstanding hypothesis derived from Walter Goldschmidt's work that industrialized farming jeopardizes public well-being. Yet the degree to which such concerns are warranted is context dependent and varied over time and place. Government policy, the nonfarm economy, local civic society, and

community institutions are contextual factors that appear to buffer potential impacts of industrialized farms while improving aggregate community well-being.

Cross-References

- ▶ Economy of Agriculture and Food
- ▶ Farms: Small Versus Large

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Corporate Social Responsibility and Food

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Synonyms

Corporate citizenship in the food industry; Corporate conscience in the alimentation sector; Responsible business dealing with food issues

Introduction

Corporate social responsibility (CSR) is connected with organizational accountability

related to the social sphere of corporate performance. CSR policies in the food industry include different activities that aim at protecting various stakeholders and the environment related in some way to the alimentation sector. CSR is also known as corporate citizenship, corporate conscience, or sustainable or responsible business. It aims to balance the expectations of stakeholders with legal, social, and ethical obligations. CSR in the food industry often concerns such issues as food-borne diseases, food poisoning, nutrition, fair trade, different alimentation needs, as well as cultural differences in food production and consumption.

There are both internal and external dimensions to CSR. The internal sphere is viewed from the perspective of employees. the external one is viewed from the perspective of various stakeholders. For example, the perception of individuals living near the food factories, mass media, suppliers, and customers is taken into account. CSR concerns various places, from factories to home kitchens.

There are several fields of interest in contemporary CSR in the food industry: (1) food quality, which includes such topics as nutritional composition, taste and visual aspects of food, certifications, and regional culture; (2) food sovereignty, which focuses on the right of local producers to manufacture regional food; (3) human welfare, which concentrates on conditions in the workplace; (4) animal welfare, which is connected with the proper handling of animals in food production; (5) ecological sustainability, which focuses on the usage of natural resources in producing food; and (6) transparency and traceability, which are connected with the opportunity to get acquainted with information on food production and various sources of food products (Deblonde et al. 2007).

The scope of CSR activities in various food-oriented business entities varies. Some of them stress all dimensions of their activities; they take care of employees, customers, natural environment, and society. As far as employees are concerned, companies from the alimentation sector highlight in their CSR policies that they are concerned about their workers, by offering them, e.g., medical packages, nutritional meals at work, and flexible working hours. As far as CSR for customers is concerned, companies aim at promoting healthy nutrition and lifestyle, paying attention to quality, and offering additional services for purchasers. Another popular sphere of interest for CSR-oriented companies is taking care of the natural environment. The companies operating in the food industry stress that they offer products in ecological packages or they use limited water resources in food production. As far as the societal dimension is concerned, companies underline that they help people in need, by, e.g., collecting food in their shops or spending some percentage of their income on charities.

Corporate social responsibility in the food industry is connected with the perception of risks (Bielenia-Grajewska 2013a). The increased role of communication media has enhanced our awareness of food risks. Often people perceived risks as more dangerous than they really are. But often people perceive dangers as less risky than they are in reality. Thus, due to the optimistic bias, individuals may recognize risks in the wrong way or claim that some risks do not concern them (Miles et al. 1999).

In the case of potential situations related to risks, optimistic bias may concern, for example, the geographical area the food product stems, although nowadays food distribution is not restricted geographically. Another optimistic approach to food risks may be related to one's nutritional style or the age of already affected victims. Risks and CSR are also characterized by the potential juxtaposition of dangers, such as conflicting risks. For example, a factory may be the source of chemical risks in the neighborhood but, at the same time, it may be the only place of work for the local community (Heath 1994).

Methods in Analyzing CSR

There are various methodologies that can be used to analyze CSR in the food industry. Some scholars adapt qualitative and quantitative approaches, used in such disciplines as social

studies and humanities, to observe how CSR is identified by various interested groups. Another option is to rely on discourse studies to show how messages are created to tailor the communication needs of various stakeholders and how these messages are understood by the target audience. Apart from the mentioned methods, some research groups work on special scientific methodologies for examining ethical issues in the food industry. They have created such tools as the ethical matrix, the ethical Delphi, the consensus conference, and the corporate moral responsibility kit that can be applied to study ethics in the alimentation sector (http://www.ethicaltools.info). For example, the ethical Delphi method focuses on the exchanges of expert opinions and arguments on ethical issues. A series of questionnaires are sent to geographically dispersed experts to facilitate collecting and clarifying knowledge on ethical notions (Millar et al. 2006).

CSR Communication

In the case of food risk communication, dangers should not only be highlighted but the way they can be effectively combated by the company should be discussed as well. It is not enough to notice that some problems appear and inform potential stakeholders about possible difficulties but additional information should be provided on how an organization plans to deal with such crises. In addition, feedback and suggested actions should be tailored to diversified stakeholders. One of the factors shaping CSR communication is the type of risk and its relevance for diversified interested groups. Customer concerns in relation to food-related jeopardies can be categorized as follows. The first group of dreads is the one that is important to all consumers and focuses on food security. The second set entails the notions of interest only to some groups of people, taking into account their lifestyle or nutritional preferences. The third group is connected with public opinion and how food products influence community and society (Brom 2000). Depending on the type of risk, the source of CSR-oriented information should be selected.

Sources of Information on CSR in the Food Industry

Effective communication on CSR issues should focus simultaneously on various aspects, on external and internal dimensions, and on online and offline spheres of interactions. As far as information on food safety is concerned, the following sources can be mentioned: food packages, magazine articles, TV cookery programs, leaflets, TV documentaries, other TV programs, recipes, family, radio programs, doctors and health personnel, friends, school, posters, university, fridge magnets, and tea towels (Redmond and Griffith 2005). The popularity of the mentioned sources differs, taking into account the reason for searching data and the types of users who want to gain information. For example, older individuals are more likely to opt for standard media (newspapers, television, radio) than for online social networking tools in obtaining data on food issues. However, the selection of information source is often moment and context dependent.

As far as food crises are concerned, the dynamism of such situations makes online tools of communication more efficient since they are able to monitor the situation continuously. In addition, taking into account the mentioned sources on food issues, the process of knowledge transfer can be direct and indirect. For example, in the case of scientific articles, individuals read them to find relevant data. However, as far as television programs are concerned, learning on food aspects during programs related to other issues often takes place subconsciously.

With the growing role of the Internet in modern societies, the web constitutes an important tool of communicating CSR. There are various reasons why the online methods of communicating issues related to corporate social responsibility are gaining popularity. One of them is the relatively low cost of informing a potentially large group of stakeholders, regardless of their geographical location. Another hallmark is related with the possibility of changing content and inserting new information very quickly.

The last feature is especially important in the case of risk or crisis communication when

a company has to react to extraordinary situations and inform stakeholders about its envisaged activities. However, it should be stated that this feature can serve the function of a two-edged sword in communication; online networks can work as efficient tools for disseminating information but, at the same time, they can become the source of data about the failures of companies in dealing with food crises and the platform for exchanging news among stakeholders. Thus, online networking tools should be an important element of communication with the target audience to ensure efficient and reliable information sources.

Modern times can be characterized by *information overload* since data provided in various sources is excessive (Misra and Stokols 2012). Thus, organizations have to select effective tools within texts and messages to attract stakeholders to the published pieces of information or news. In the magnitude of offered informational sources, the written or spoken pieces of information must have features that make them outstanding among other informational sources.

Tools in Communicating CSR

There are various ways of informing stakeholders on CSR policies. One typology includes verbal and pictorial methods of communicating CSR. As far as the linguistic dimension of CSR is concerned, both literal and nonliteral methods of communication are used. Literal language encompasses all linguistic strategies that rely on their defined meaning; the selection of nouns, adjectives, and verbs is important in shaping CSR information. For example, the use of adjectives such as *careful*, *responsible*, and *reliable* shapes the positive attitude towards a company. The same applies to different verbs of action, such as *analyze*, *arrange*, *develop*, *improve*, or *participate*, that stress the active role of organizations in creating and sustaining responsible citizenship.

Nonliteral (figurative) tools of expression offer the unusual meaning of words and phrases. In the case of CSR communication in the food industry, figurative language offers novel perceptions and own interpretations of communicated issues. Since nonliteral linguistic instruments have the element of surprise, astonishment, or curiosity in them, they generally attract one's attention easier than standard forms of expression. Although there are different types of nonliteral tools, such as idioms, puns, similes, paradoxes, and metaphors, the last ones belong to the most popular vehicles of organizational communication.

CSR Through the Metaphorical Perspective

There are various reasons for the popularity of metaphors in the CSR discourse. First of all, the usage of metaphors in sustainable dialogue facilitates quick and effective communication since images and symbols understood by the wide audience are used (e.g., Bielenia-Grajewska 2009). For example, some concepts from the domains of war, illness, or fairy tales are widely recognized by different stakeholders and offer immediate connotations. Secondly, in comparison with long and descriptive texts, metaphorical names are more efficient in terms of devoted time and used space. However, it should be noticed that symbolic language possesses some ambiguity in it and presents only selected aspects of some issues (Spicer and Alvesson 2011), and consequently, the responsibility is dislocated in communication. Some also claim that metaphors present meanings in a distorted mirror; they do not show the real situation and, consequently, the real danger connected with food risks is not described in detail.

Metaphors can be studied by taking into account the issue or the participants in the CSR discourse. The use of symbolic language in discussing food risks has the aim of exemplifying certain characteristics of them. For example, food-borne disease are pictured through war metaphors to show that food-borne illnesses are dangerous and, consequently, they require effective actions if one wants to defeat them. Their power is also stressed by comparing them to natural

disasters that can be difficult to predict, spread quickly, and affect a considerably large number of people. The food itself can also be pictured through, e.g., the perspective of a journey metaphor to show that alimentation can become a vehicle for transporting diseases (Bielenia-Grajewska 2013b).

In addition to the topic approach in the discourse on CSR, corporate citizenship can be studied by looking at organizations from the perspective of metaphors. Thus, such concepts as *organization as a teacher* are popular in CSR discourse. This symbolic interpretation stresses the educational character of a company that is directed not only at gaining profit but also at educating stakeholders on how food should be prepared or stored. In addition, an organization can be pictured as a protector that takes care of safety (Bielenia-Grajewska 2014). These discursive strategies create the company identity in the eyes of the public by showing the attitude of companies to CSR through organizational metaphors.

Future of CSR Research

Another possibility of researching the CSR communication is by applying the neuroscientific research. One example is neuroethics that studies morality in CSR and how individuals react to morally arguable actions. The interest of neuroethics depends on the type of industries taken into account. For example, medicine, together with such aspects as the influence of medical substances on human beings, potentially involves more risks than other business activities that do not possess any direct involvement with health (Bielenia-Grajewska 2013d). Consequently, the food industry is also likely to attract the attention of specialists involved in neuroethics, taking into account the risks connected with, e.g., food poisoning and food-borne diseases. For example, neuroimaging techniques can be used to study participants' responses to food risk communication conducted by CSR-oriented companies. Such studies may help in selecting the best method to communicate food-related issues to potential stakeholders. These methods also offer the opportunity to study emotions and feelings concerning CSR that may not be disclosed by participants in the standard methods of questioning, such as questionnaires and interviews.

Summary

CSR in the food industry concerns different areas of investigation and concerns various stakeholders. Taking into account the growing competition in many sectors of the food industry and the accelerating role on social networking tools in exchanging information, organizations representing the alimentation sector should use diversified methods of communicating their attitude to the ethical, social, and legal sphere of organizational performance and establishing proper relations with the environment. Modern customers do not only take care of the quality and price of products offered on the market, but they become more and more aware of the sustainability of companies operating in the food industry. Thus, effective CSR policy is indispensable in the dialogue with diversified stakeholders.

Cross-References

▶ Company Identity in the Food Industry
▶ Food Labeling

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Cosmopolitanism, Localism and Food

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Synonyms

Global and local perspectives; Global ethics and local diversity

Introduction

Cosmopolitanism is the thesis that there are certain universal values and transboundary or global responsibilities toward human beings anywhere. Localism is the thesis that local knowledge, local traditions, and local understandings of what is good for people are important to understanding and promoting well-being in any given locality. In respect to food and agriculture, typically a cosmopolitan is interested in questions like the following: since large numbers of people in the world are hungry or malnourished, what should be done to increase access to food, whether by aid, increased trade, or trade conducted under better rules; with new methods of agriculture; through reduction of food tariffs and other protectionist measures; and so on? Typically in respect to food and agriculture, the localist perspective will emphasize the importance of local knowledge and practical expertise and local experience of how to manage the land (agricultural techniques, what seeds work in what soils, etc.) and the importance of certain kinds of food that may have cultural, perhaps religious, meanings.

Do these two perspectives clash? The short answer is that they can but that they need not. If, for instance, a localist thinks that local values and conceptions are such that there cannot be a universal ethical perspective assumed by cosmopolitanism, then there is a clash. If, for instance, the cosmopolitan presents his/her view in such a way that local perceptions of value are judged to be wrong because they conflict with the cosmopolitan account of universal values, then there is a clash. But if cosmopolitanism is presented in such a way that its universalism is sufficiently sensitive to the local values and knowledge that localism points to, and if localism is so understood as merely to stress the importance of the local for the full understanding of human well-being and what is needed to promote or maintain it, but accepts a global framework of responsibility for promoting and not undermining those conditions of well-being so understood, then there is no clash at all. Indeed, the two perspectives somewhat complement each other in response to a third approach – or cluster of approaches – that reflects the projections of interest and power within national politics, in geopolitics, and in the agendas of many multinational companies.

This entry explores the issues framed in the way above in more detail. While the author does not conceal his preference for the latter complementary approach, the entry's main function is to map the issues, so it also identifies where the sources of tension arise as well. In the first half, the entry looks at cosmopolitanism and localism in general, and in the second half, it applies this to some issues to do with food and agriculture.

Cosmopolitanism

Cosmopolitanism comes from the Greek root "cosmo-polites," literally "citizen of the universe," but it is usually understood to mean "world citizen" or "global citizen." For the Stoics in the ancient world, it was a metaphysical affirmation that human identity was as members of the community of all human beings subject to the natural law or universal moral law, not merely based on their contingent identities as members of particular states, families, etc. What is retained in later periods, such as the European Enlightenment, and in the twentieth century is the claim that human beings belong to one moral community, that all human beings are equal in moral status, and that they have in principle obligations toward all fellow human beings, both not to harm them and to some degree to help them (Brown and Kleingeld 2006).

This statement from Pogge, whose book *World Poverty and Human Rights* (2002) has become an important focus of cosmopolitan concern about world poverty, defines the position thus:

> Three elements are shared by all cosmopolitan positions. First, individualism: the ultimate units of concern are human beings, or persons – rather than, say, family lines, tribes, ethnic, cultural or religious communities, nations, or states. . . . Second, universality: the status of ultimate unit of concern attaches to every living human being equally – not merely to some sub-set, such as men, aristocrats, Aryans, whites, or Muslims. Third, generality: this special status has global force. Persons are ultimate units of concern for everyone – not only for their compatriots, fellow religionists, or suchlike. (Pogge 2002, p. 169)

Thus, if one accepts the idea of being a global citizen, one may accept that one ought to support aid projects, that is, positively to help. One may buy fair trade food in order to reduce one's dependence on economic systems that may be "free trade" but are either less fair or unfair. One may join an organization like Amnesty International to reduce the injustice and hardship experienced by particular individuals in other parts of the world. One's engagement as a global citizen may express itself politically as a "globally oriented citizen" (Parekh 2005), for instance, through membership of civil society organizations campaigning to get one's government's foreign policy changed over trade agreements, climate change measures, debt relief, and so on.

Cosmopolitanism also has profound implications for how institutions and corporate bodies are assessed, whether these are nation-states, international organizations like the UN and its agencies, legal systems, or commercial organizations. If the ethical starting point is accepted that all human beings are equal in moral status, then at the very least an assessment can be made on how well or badly such institutions further or thwart human well-being anywhere. Thus, cosmopolitanism often offers a critique of nation-states and their foreign policies or what transnational corporations do. Given, for instance, that secure and sustainable access to sufficient healthy food and clean water is among the fundamental goods that all human beings ought to have and have equally, do international trading policies help to realize this or help to do so as well as might be expected given political constraints, or not? If climate change is contributing to the reduction of such access for poor people, then does that fact add to the arguments for serious commitment from states to climate mitigation and assisting with adaptation?

There are two issues concerning cosmopolitanism that need to be identified, since how they are resolved will have a bearing on the relationship to localism.

First, insofar as cosmopolitanism is a commitment to the thesis that all human beings matter or that human well-being for any human being is of equal value, there is the question of how this well-being is defined, both in regard to

(a) how it is validated, e.g., by cross-cultural dialogue, philosophical theorizing, or whatever, and (b) what its content is, whether its content is thin(ner), leaving much to individual and cultural interpretation, or thick(er) in terms of richer conceptions of what real well-being consists in (whatever people themselves might think) often linked to the acceptance of some (commonly religious) worldview (Dower 2007). The danger with the former is that it may lead to allowing too wide a range of conceptions of well-being as being acceptable. The danger with the latter is that it leads to the projection or imposition of ideas derived from one culture or tradition, onto the rest of the world, thus constituting a form of cultural imperialism. But there is also a practical danger in the latter here, in that those with cosmopolitan ideals who are in positions of power or influence in respect to devising appropriate global policies, e.g., on food or agriculture, may, without wishing to so, make proposals that reflect universalist assumptions of a "one cap fits all" kind that are not sufficiently sensitive to what is needed in different circumstances. This is where in practice, whatever theoretical accommodation can be made, tensions between localism and cosmopolitanism can arise.

The issue of what kind of cosmopolitan conception of well-being is appropriate may not merely arise because cosmopolitans may put a very strong specific a conception of well-being into the picture; it can arise because those in power in national and international organizations come with a conception of human well-being which is actually very thin. The main example of this is the perspective of the libertarian, particularly the economic libertarian, whose conception of the central value of human well-being as being the exercise of liberty in a minimally fettered free market (Nozick 1974) leads to a disregard for the diverse nonmarket-driven values that localism often favors. The kind of cosmopolitanism that is consistent with localism is quite different from this, but it is worth noting that although free market advocates do not often present themselves as cosmopolitans, they are nevertheless cosmopolitans insofar as they have a core value – liberty – which they think is the key to well-being everywhere and ought to be promoted everywhere.

The second issue concerns the nature and extent of cosmopolitan transboundary obligation. Cosmopolitanism can be presented in a strong form and as such can be in conflict with both localism and other theories that prioritize obligations to limited groups, but it can be presented in a less strong form and as such need not be in conflict with localism.

Two elements combine to create the really strong thesis; first, that if all human beings matter equally, then in moral decision making when people act for the good of others, they should not privilege the good of some human beings over that of others just because they belong to their country, their locality or community, or for that matter their family, or if they do (as people actually do!), there has to be some special justification for so doing. Second, they always ought to act so as to promote human well-being anywhere as much as possible. If these two claims are combined, a strong ethical demand is entailed that, for those who live in richer countries, since the suffering of so many people elsewhere in the world is so much greater than that in one's own country, one ought really to devote most of one's money and time to addressing these distant ills.

One version of this offered by Peter Singer in his article "Famine, Affluence, and Morality" (Singer 1972) is well known. He argues that just as a lecturer would at some cost to himself rescue a drowning child in a lake, acting on the principle "if it is in our power to prevent something very bad from happening without thereby sacrificing anything of comparable moral importance, we ought to do it," so are those in richer countries ought to prevent deaths in poorer countries as much as they can. Countless articles are devoted to replying to its challenges. A similar kind of ethical challenge has become more prominent in recent years concerning individual's responses to climate change. Should one do all one can to reduce one's direct and indirect carbon footprint, with all that that entails for not just how (much) one travels, but what one eats (e.g., where food comes from, eat less or no meat, and so on)?

A weaker form of cosmopolitanism does not have these implications: it is the claim that one has significant but not overwhelming obligations to promote good anywhere and reduce one's contribution to harms anywhere and that while the privileging of the promotion of the good of some humans (especially family, friends, and oneself) can be justified, there are distinct limits to what is reasonable in this regard. Where the lines are drawn and how they are justified is a complex matter. What is important is the cosmopolitan perspective, which, if it were adopted by significantly large numbers of people, would lead to significant changes in public policy.

Localism

Localism refers to a range of approaches that prioritize the local (O'Riordan 2001; McIntosh 2001). The three main areas of prioritization may be seen as practical, cultural, and political. Localism may put emphasis on the need for greater production of goods – whether of food, furniture, arts and crafts, clothes, or whatever – combined with greater consumption of these goods by people in the same locality. The reasons for this may be environmental, for instance, in reducing food miles or goods miles or in reconnecting to the landscape (Cooper 1992); or they may be economic in that more economic functioning locally with less dependence on wider networks is good for people living in the locality because there is greater control (including the use of local currencies as in LETS) but also because it contributes to a stronger sense of community. Sometimes the production of goods locally is linked to a desire to preserve or reactivate traditional skills and crafts that are in danger of being lost. Particularly in poorer countries, the localist outlook may be expressed in a rejection of development models that are seen as coming from outside and the affirmation of local knowledge.

A communitarian basis for localism may sometimes be emphasized more generally – that people's identities are importantly grounded in the shared history and customs of a given locality. Furthermore, localism may stress the importance of local governance and government with significant degrees of autonomy from larger political systems. Thus, in this respect, generally localism is contrasted with the idea of political control at a regional or nation-state level (though interestingly enough what is called bioregionalism is inspired by a form of localism).

More generally localism, at least in its modern formations often called relocalism, is a kind of reaction to the trends of globalization, insofar as globalization represents the pervasive impact of global economic forces on what happens locally in almost all parts of the world and also represents the penetration of global culture into the local, thus tending toward the homogenization of cultures (Scholte 2000). This response to the trends of globalization has led some writers to describe or advocate a process known as glocalization, in which the forces of globalization are counterbalanced by (re)localizing tendencies (Robertson 1992). But there may lie behind these localist ideas a deeper thesis, namely, that in emphasizing the local, one's prioritizing it either denies or downgrades the importance of what lies outside the local.

This kind of perspective is often identified as a form of communitarianism which may emphasize two things (Bell 2012). First, the values that are accepted in the locality are at least partly and significantly derived from that local community's shared history and traditions and get their validation from that fact, and as such, insofar as it is also claimed that values vary from one community to another, some thesis of relativism is accepted and therefore some skepticism toward the whole global ethics perspective (this is even more prominent in a view called ethical particularism which opposes the ethical generalism underlying cosmopolitanism (Dancy 2001)). Second, because of the reciprocal ties arising from people living together, the scope of people's obligations are first and foremost to members of their local community (or one's country as a political community), much less toward the world as a whole since it is not a community in the relevant sense. If people in a given local community (or for that matter the wider community of their state) feel some

obligations toward people in some other parts of the world, then this is an accident of the fact that some concerns have developed through their history, not a consequence of some cosmopolitan global ethics.

The Relationship Between Cosmopolitanism and Localism

It will be apparent from the account of cosmopolitanism and localism given that they can be consistent with each other but that they need not be. The reason for this needs to be spelled out.

If cosmopolitanism is presented in a strong form that asserts that a general and complete account of human well-being can be applied to any situation anywhere (so that local understandings, if different, are wrong), then it conflicts with localism in any form. If cosmopolitanism is the claim that all obligations have to be justified as consistent with or in some way contributory toward the promotion of well-being of humans anywhere, it conflicts with localism in any form that asserts locally based obligations. Conversely, if localism is asserted in a strong form (less likely) that all values are locally sourced and validated, it conflicts with any cosmopolitanism that asserts a universal account of value. If again localism claims that obligations are primarily with fellow localists, it conflicts with any cosmopolitanism that asserts significant transboundary obligations.

There is of course left the third, arguably more common, alternative. Cosmopolitanism is asserted in some form to the effect that whatever universal values there are, they are to be so understood that they are contextually sensitive and open to many local interpretations (Pogge 2002); and indeed, it welcomes in general the maintenance of or return to what localists favored – local sourcing of food and other goods, a strong sense of local community, robust local governance, and so on – as furthering human well-being. Cosmopolitanism also asserts that however much new scientific and technical developments are promoted, that is done in such a way that allows for the input of local wisdom and knowledge, and that global obligations are not so strong as to undermine the range of rights and obligations people have in local communities. Localism is asserted in such a way that while it resists pressures from outside toward uniformity or unduly economic or consumerist models of well-being that may come from the state or wider processes of globalization or resists excessive loyalty to wider entities such as the state, it does acknowledge a common global value framework and the idea of transboundary or global responsibility in principle and indeed welcomes it, particularly if that cosmopolitan perspective actually supported local communities that resist pressures from other sources such as central governments and big business.

The entry now turns to some issues concerning food and agriculture to illustrate further the above framework (Blatz 1991).

Access to Food

Whatever else cosmopolitans insist on, they insist on claiming that all human beings should have access to the conditions of a reasonable life or a life one has reason to want to lead (Sen 1999) and that this includes minimum access to such things as adequate healthy food, enough potable water, proper shelter and clothing, security against attack on one's person or property, education into relevant life skills, medical care, participation in communal decision making, etc. (Pogge 2002). The aspect nowadays that is made explicit (what was implicit before) is that access to those things is sustainable. If a cosmopolitan uses the language of rights – which he/she need not – he/she will talk of the human right to food, water, etc.

Almost everyone would subscribe to such claims or at least to the ideal of a world in which these things were realized. Why then do over a billion of the world's population remain in absolute poverty with so little access to food that they are starving or malnourished? It is generally recognized that currently the problem is not that there is not enough food in the world – and indeed, many would argue that with improved

methods of agriculture or switching to much more nonmeat-based diets (since feeding grain to animals is a very inefficient way of producing protein), even more food could be produced.

However, one dimension of the planet's finiteness is its finite capacity to produce on a renewable basis food for humans, and at some point, increasing human populations will bump up against these limits; and indeed, this capacity may be being reduced through land degradation. The other two dimensions of finiteness are the planet's finite capacity to provide nonrenewable resources and its finite capacity to absorb the effects of human activities without deleterious effect, as can be seen with species loss, pollution, and CO2 emissions. But the three dimensions are all interlinked in practical terms to the challenge of devising appropriate strategies for "feeding the world" and so on. In some ways, especially in light of the likely effects of climate change, this aspect – the global capacity to produce enough food – is beginning to play a role in global thinking about food under the banner of "food security," an agenda which is as much driven by concerns of wealthy countries about their continued access to the foods they want as by concerns for access to food for the very poor. Food insecurity has been the lot of the very poor on a large scale for decades.

The reason currently however for lack of access to enough food for the poor is not one of absolute scarcity but one of distribution, in which very poor people do not have access to sufficient food either because they do not have enough fertile land to grow it or because they do not get it from others through either having enough resources to acquire it in economic transactions or happening to be the recipients of food through aid programs. Since these are not natural facts (such as acute shortages caused by natural disasters) but facts for which the causes lie in human *decisions* which could be different, it is from the point of view of many cosmopolitans an issue of justice, including global justice (Pogge 2001), since the actors involved include actors elsewhere. These are nation-states, business companies, citizens, and consumers in other parts of the world, all of whom could act differently.

It is one thing to say that people all have a right to food (or, e.g., water), and another to say that this right to food (or water) has a priority over other rights because it concerns the basic minimum conditions of life. Consider property and land rights within any country including poor countries. How far do they impede fair distribution? Should there be a radical land reform? Consider intellectual property rights such as those enshrined in TRIPS (Trade-Related Aspects of Intellectual Property Rights) agreements, which now form a major part of the WTO (World Trade Organization) agenda in which large companies are able to exert such powerful influence in determining the price of seeds that poor farmers have to pay. Consider the perspective of countries pursuing their economic interests individually or collectively, as in the case of EU's (European Union's) CAP (Common Agricultural Policy), with protectionist measures. This is commonly seen as asserting their rights to national self-interest behind which is the right of their citizens to enjoy a much higher standard of living than that experienced by the very poor. Are these acceptable, given the effects on the very poor?

Controversies exist over whether such regimes with their embedded rights contribute to extreme poverty and the poor's access to sufficient food and, if so, whether they are justified if they have these effects. On the whole, most modern cosmopolitans – other than those who are libertarians in their approach or think that in the long run such regimes tend to the general good (as an aspect of what is sometimes called "trickle down" development) – question to varying degrees such regimes and see their claimed justifications stem mainly from alternative paradigms of international relations or business ethics.

Be that as it may, whatever the arguments are in what is sometimes called the "politics of food" (Tansey and Rajotte 2008) – for and against political and institutional changes as a significant contributory factor in enabling poor people to be less poor and to have more food, it is commonly assumed, both by those who see it in cosmopolitan terms and those who do not, that a major contribution to reducing food shortages

for poor people themselves is practical change, for instance in agricultural methods.

Aid programs – whether national bilateral or multilateral or government based or NGO based (nongovernmental organization based) – of course play their role, not merely in emergency or humanitarian situations but in providing development assistance. The difference between emergency aid and development assistance can be illustrated by a quotation from De Schutter, "Save in situations of natural disasters or civil strife, the right to food is not the right to be fed; it is the right to feed oneself in dignity" (De Schutter 2009, p. 8). The aim of the latter is (or ought to be) to empower poor people either to produce more food themselves or to acquire more wealth so that they can buy more food. Such aid programs will often involve the provision of agricultural equipment, providing better access to water – a critical factor not just for drinking water but agriculture itself – or the introduction of new agricultural techniques.

This now leads to localism. Localists living in poorer countries may protest at a lot of what is done or alternatively not done as contributing to their not having enough access to food. Poor people may feel that their opportunities to grow food are thwarted by larger economic forces over which they have no control – property investors from the cities, large-scale operations of transnational companies, the development of monoculture regimes producing cash crops driven by export markets, seeds they have to buy at high prices, and so on. The Green Revolutions have been seen as having their downsides – for instance, the very poor not being able to afford the fertilizers or pesticides that are needed to get the extra benefits of the high-yield crops. In other words, they may protest at the lack of control they have in their communities.

In respect to the aid given by donors, again there may be concerns that not sufficient attention is paid to local knowledge about farming techniques or about local seeds (which may be well adapted to local terrains, etc.). The outside expert may not recognize that sometimes the poor are not disempowered by their lack of appropriate agricultural knowledge but by other factors. Much of the attraction to the approach of E.F. Schumacher's *Small Is Beautiful* (Schumacher 1973), later continued in the work of Practical Action, which he founded under the name the Intermediate Technology Development Group, was the recognition that high-tech solutions were not right for many local conditions.

It should be apparent that these concerns of a localist kind are not as such opposed to cosmopolitan concerns about "feeding the world." Rather what they are up against are tendencies that stem from other ways of thinking connected with inter alia: the rights of nation-states to pursue their national interests even at the expense of what would be better from a global point of view, the rights embedded in economic regimes within countries that trump the rights of the poor, and the rights of companies to maximize profits. Of course some cosmopolitans might have some sympathy for these rights, but generally nowadays cosmopolitans are as concerned as localists about these factors.

The Environment

There are many environmental issues that have an impact on food and agriculture, but the focus here is on two issues – climate change and water. Clearly climate change is likely to affect, if it is not already affecting, the capacity to grow food in particular places and areas, because, for instance, of reduced rainfall, and much of this change is occurring or will occur in parts of the world where poor people live. So whatever general arguments there are for mitigating emissions to reduce the collective impact on human well-being in the future, there are good reasons both to mitigate the particular impacts on the world's poor now and also to help with adaptation (Garvey 2008). Here, there is largely convergence between the cosmopolitan who says that one has serious reasons to reduce one's emissions in various ways for the good of all in the world and the localist who, other things being equal, wants his/her environment to remain a "field of significance" he/she positively values (Cooper 1992).

A more complex relationship emerges in the case of food miles. If there are significant carbon costs from long-haul transportation, then one way of discharging one's environmental responsibility to reduce emissions is to reduce dependency on such foods. There are two other kinds of reason; first, as noted before, localists may argue for this since locally sourced food contributes to local economy, identity, and community; second, as a measure in a country's food security policy, it makes it less dependent on imports from other parts of the world.

However, if such preferences for local food and less reliance on imports from distant countries were to become widespread, it would have major implications for what happens in the countries where these foods are produced, which might not always be well received by local communities there. Thus, certain measures may not be to the advantage of all localities. Localism is not an approach that produces a preestablished harmony of interests, and a cosmopolitan's wider perspective may be needed to help lessen conflicts of interest where they arise. For example, the fair trade movement is not premised on reducing food imports but making them more consistent with the principles of global justice, so what's good for one community – more locally sourced food – might not be good for another, namely, less food wanted that is fairly traded. In this case, a resolution might be a reduction only of goods traded otherwise, that is, goods that come from business corporations in poorer countries that are not pro-poor and indeed may take up land in competition with what people want in local communities in poorer countries.

An interesting aspect of this relates to the issue of water. Access to water is a critical issue for the future of agriculture since agriculture depends heavily on the amount of water available in given areas. It is well recognized that one of the sources of conflict in the future will be competition between countries for water, particularly water that runs in rivers through several territories. But at another level, from an ethical point of view, the most critical issue has to do with what is needed so that all people have secure and sustainable access to sufficient potable water and sufficient water for the production of crops that they need, etc. The right to water as the right to sufficient potable water for health and for adequate economic livelihood needs to be contrasted with and prioritized over any claimed right to water as a right that one has to any amount of water one wants (and can pay for) to satisfy one's desires for affluent living and to maintain the industries that produce the goods associated with affluent living. It is not that it is wrong to want these things as such, but an entitlement to the water necessary to these things is not of the same moral order as the basic right to water. At least this is what a cosmopolitan who was not a libertarian would claim.

This is not just a theoretical point. Increasingly it is recognized that what happens in one part of the world has an impact on other parts of the world even in regard to water. The amount of water one actually uses needs to be distinguished from the amount of water "embedded" in the goods that one uses (called "embedded" or "virtual" water). Consider a cup of tea with milk and sugar: maybe there is 1/3 l here. But consider the water used to grow the tea and sugar and to rear the cow, estimated to be over 30 l (BBC 2010). This is a rather dramatic example of what is called one's indirect environmental footprint. Its relevance to what happens in other parts of the world is this: if large amounts of water are used elsewhere to produce things that people want – not just food but the whole range of goods and components for goods – what impact does that usage have on the distribution of access to water in the other parts of the world where the goods come from? Sugar and tea plantations may not necessarily be the best use of agricultural land or the water needed for them from the point of view of what would be best for the very poor who may have very limited access to water needed for life and livelihood.

Another example sometimes given that illustrates these issues and others raised in this entry is that of cut flowers flown from developing countries. Whether the development of this kind of use of agricultural land is to be welcomed raises big issues. It is something that can be questioned for all sorts of reasons, not just over the use of water

of course, from both cosmopolitan and localist perspectives. Should land be used for "luxuries" for distant people where people are starving? What about the environmental costs of air transportation? Does not however the very raising of these questions strike at the heart not only of the international free market but also of the rights of entrepreneurs to use land to grow whatever they want – whether it is flowers, tobacco, or foods – for which they see that there are markets, local, national, or international? Arguably these questions do not do this. Rather they provide a reminder that there are many considerations other than the exercise of economic liberty that ought to influence the decisions people make, whether as individuals or as members of commercial or political institutions, locally, nationally, or globally.

Conclusion

Cosmopolitanism and localism offer very different perspectives on what is ethically important. In examining issues to do with food and agriculture, it can be seen that sometimes they are in tension with each other. But more generally there are convergences of ethical concern in the face of economic and political pressures from other sources.

Summary

Cosmopolitanism asserts that there is a universal value framework which includes significant transboundary obligations. Localism asserts the importance of local values and knowledge. They can conflict if cosmopolitanism questions the importance of local values and knowledge or localism questions significant transboundary obligations. But they can be combined as the thesis of global responsibility to promote the conditions of human well-being partly defined in localist terms. Often they provide a common approach opposed to trends derived from national politics, geopolitics, and the global economy. In the second half of the entry, these approaches and their relationship are further illustrated with discussion of issues to do with food and agriculture, especially access to food, climate change, and water.

Cross-References

- ▶ Biotechnology and Food Policy, Governance
- ▶ Climate Change, Ethics, and Food Production
- ▶ Environmental Ethics
- ▶ Ethical Activism with Consideration of the Routine of Food Culture
- ▶ Fair Trade in Food and Agricultural Products
- ▶ Food and Agricultural Trade and National Sovereignty
- ▶ Food assistance and International Trade
- ▶ Food Security
- ▶ Free Trade and Protectionism in Food and Agriculture
- ▶ Public Institutional Foodservice
- ▶ Water, Food, and Agriculture

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Cross-Contamination of Crops in Horticulture

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Synonyms

Adventitious presence; Coexistence; Gene flow; Genetic drift; Genetic pollution; Transgene escape

Introduction

Cross-contamination of crops in horticulture is an old phenomenon. Farmers have long experienced genetic material from a neighbor's fields finding its way into their crops. However, the recent development of transgenic crops, often referred to as genetically modified (GM) crops or genetically modified organisms (GMOs), is the source of much recent controversy regarding cross-contamination. While many countries have experienced rapid adoption of GM technology, other countries have received it with suspicion and precaution. The varied reactions to GMOs have for the last several decades given rise to conflict and debate on scientific, political, and ethical issues. Cross-contamination has become a frontline in these debates. For example, in 2011, the US Department of Agriculture (USDA) approved GM alfalfa for use. Due to predicted widespread contamination of organic alfalfa with GM material, organic producers felt that the organic status of their corps was under threat. The USDA's decision led to heated debate and litigation where organic and environmental groups were pitted against the government and biotech industry.

The goal of this entry is to identify and clarify the moral and ethical issues arising from the inevitable movement of genetic material between GM and organic and non-GM crops. This goal will be achieved by (1) listing the ethical questions that must be answered if GM, non-GM, and organic producers are to coexist, (2) highlighting the importance of the role that the precautionary principle and the principle of substantial equivalence play in coexistence policies, and (3) discussing two moral theories that can be used to frame the debate over cross-contamination of crops in horticulture.

Cross-Contamination and Coexistence

Like cross-contamination, coexistence is not new to horticulture. However, the advent of GM crops has made coexistence a controversial issue and an area where ethics research is needed. Coexistence roughly refers to different production systems operating in proximity in ways that minimize the negative impacts one system might have on the other. The concept of coexistence is essentially ethical, as it implies a just or fair

distribution of the risks, benefits, and costs of coexistence. In the case of GM crops and cross-contamination, coexistence largely means mitigating the amount of GM material that inadvertently finds its way into non-GM and organic crops. GM material can contaminate non-GM and organic crops in several ways (e.g., seed impurities, cross-pollination, volunteer seeds from previously planted crops, and residual material in harvesting machinery and storage facilities). The extent of cross-contamination can vary greatly depending on many factors. For example, papaya pollen is heavy and does not travel very far, whereas canola-rapeseed pollen is light and can travel long distances. There is, then, a greater threat for cross-contamination in canola-rapeseed than papaya due to pollen flow.

Adventitious presence has long been used to describe the occurrence of impurities (e.g., weed, dirt, and insects) in agricultural products. Since it is all but impossible to harvest a pure crop, maximum levels of adventitious presence (impurities) in an agricultural product can be regulated. The coexistence framework assumes that GM material in non-GM and organic crops can be treated as adventitious presence. It also presupposes that GM and organic crops are in principle compatible, and the way to resolve conflicts is to find the strategies that minimize conflicts created by economic losses due to adventitious presence. However, some opponents of GM technology see transgenes as dangerous pollutants that cannot be recalled once they have escaped into the environment. These opponents do not think it is legitimate to apply the concept of coexistence to the problem of cross-contamination and GM crops; they argue that describing GM material as relatively benign adventitious presence underestimates the risks associated with transgenic technology.

However, the problem coexistence designed to resolve is the possibility that organic and non-GM producers will suffer economic loss due to contamination with GM material. For decades, the number of consumers willing to pay higher prices for organic products has been increasing. Moreover, organic consumers expect, among other things, that organic products do not contain GM material. Simultaneously, production of GM crops has rapidly increased. The growth of these two industries has brought them into conflict. The crux of the coexistence problem, then, is that organic and non-GM producers hoping to receive a price premium for growing "GM-free" crops can suffer economic losses if their crops become contaminated with GM material from impure seed batches, cross-pollination, etc.

Coexistence and Philosophy

While discussions of coexistence often focus on economic and technical issues, the debate over coexistence is often driven by deeper philosophical commitments. Many who oppose GMOs and agricultural biotechnology see this new technology as unnecessary, inherently risky, and ethically suspect. Further, it is often seen as a means for further advancing the hegemony of industrial agriculture, which they believe is environmentally unsustainable and socially unfair. A Spanish organic farmer summarizes these views, remarking "Why do we need to have GMOs if this technology creates uncertainties, contamination, homogenizes agrarian cultures, the consequences concerning health effects are not clear enough and there are huge questions related to ethical issues" (Binimelis 2008). For these reasons and others, many people and groups have taken a precautionary approach to GM crops: they are assumed to pose a threat to health and the environment until proven otherwise. The International Federation of Organic Agriculture Movements has come out against biotechnology "because of the unprecedented danger this presents to the entire biosphere, and particular economic and environmental risks it poses to organic producers" (Verhoog 2007). On the other side of the debate, biotechnology advocates see GM crops as substantially equivalent to conventional crops. From this view, no agricultural crop is natural or pure, and GM material should not be labeled as an exceptionally hazardous pollutant (Bruce 2003). In addition, scientific promoters of transgenic technology see it as a major breakthrough in the history of agriculture. This is in

large part a philosophical debate over the essential nature and morality of organic agriculture versus GM agriculture: it is politically polarizing and not easily resolved.

Coexistence "brackets" these philosophical issues by presupposing a liberal moral philosophy, guided by the principle of liberty and the harm principle. The principle of liberty requires the state to be neutral on questions of moral and philosophical significance to individual people and groups, i.e., questions about the good and the good life. It allows individuals the freedom to pursue their personal convictions on how to best live their lives, unless they harm others. At this point, the state can no longer remain neutral and has an obligation to intervene to prevent harm. The coexistence framework, then, attempts to be politically neutral on the moral and metaphysical dispute between organic and GM agriculture. Coexistence as a liberal concept means creating a system that is fair to a plurality of cropping choices.

Coexistence and Ethical Questions

Due to the growth of the organic and GM industries and the problem of cross-contamination, the liberty of organic and non-GM producers has come in conflict with the liberty of GM producers (Verhoog 2007). While the principle of freedom of cropping requires the relevant government agencies to be neutral and fair in creating a regulatory environment, in reality, neutrality and fairness are difficult to achieve. Regulations aimed at coexistence can easily prejudice one agricultural system over another. Furthermore, regulations do not admit straightforward technical solutions; regulatory frameworks for coexistence rest on moral and political decisions that distribute risks, benefits, and burdens. For instance, setting of standards (or not) for levels of purity in organic and non-GM crops requires compromise.

Many organic farmers and consumers hold that the integrity of organic products requires them to be 100 % GM-free. However, if a GM crop is grown near a sexually related non-GM or organic crop, some contamination is all but certain. It is not economically practical to keep crops in complete isolation. Coexistence requires organic farmers and consumers to compromise and accept some level of GM adventitious presence. But if the levels of purity are set too high, the measures required to mitigate cross-contamination are too costly to make coexistence possible. Coexistence removes the liberty to choose completely "pure" organic products, and stringent standards of purity remove the liberty of farmers to choose to grow GM crops.

For policymakers to navigate this ethical dilemma, they must answer the following types of questions: What levels of GM material in organic and non-GM crops are acceptable? What measures should be implemented to meet these standards? Who has the duty to implement these measures? Should the burden be on GM farmers to "fence-in" their crops or should the burden be on the non-GM and organic growers to "fence-out" GM material? If contamination occurs, how should organic and non-GM producers be compensated for economic losses? The USA and the European Union are approaching these questions very differently, which has led to contrasting approaches to coexistence. To understand the ethical issues here, it is instructive to contrast these to two approaches.

Coexistence in the European Union

The EU is officially committed to coexistence and freedom of cropping. However, the adoption of the precautionary principle to regulating biotechnology seems to have created an environment where some feel the burden on GM is too large. The EU has adopted a two-tier approach to setting thresholds for GM adventitious presence in products. In regard to the question of thresholds, the EU has regulated that there is a 0.9 % limit applied to approved GM products and a zero tolerance threshold applied to unapproved GM products. This is a fairly stringent standard for purity – the USA has no maximum standard, and Japan's threshold is 5 %. The 0.9 % limit, then, is a practical, political compromise within the European context that has left some people on both sides of the GMO debate unhappy.

Questions about measures used to meet these standards and who has the duty to implement them are left to the EU's member states progress toward coexistence varied across Europe. For example, Spain has made the most progress on implementing a legal framework for coexistence, whereas Austria has sought to remain GM-free. There are several techniques that can be used to mitigate adventitious presence below the 0.9 % threshold, for example, creating buffer zones around crops, staggering the planting of crops so flowering occurs at different times, and cleaning harvesting and processing machinery and storage facilities.

The question on compensation for financial losses due to GM contamination is also decided at the level of the EU's member states. Because there are so few GM crops grown in the EU as of 2013, this is not a significant problem. However, the liability schemes throughout the EU place the burden on the GM industry and GM growers. If an organic or non-GM farmer can show that contamination leading to economic losses occurred due to negligence on the part of a neighboring GM farmer, that GM farmer can be held liable for full restitution of losses. If contamination occurred accidentally, the organic or non-GM farmer would be reimbursed through a compensation fund. The mechanism for endowing the compensation fund varies by member state, but in all cases, compensation comes in some way from GM growers or the GM industry.

In Europe, coexistence has become "a focus of opposition to GMOs," since it "arguably constitutes the last rampart against the full commercialization of the GM crops that have now passed through the authorization stage" (Bodiguel et al. 2010). Several authors have objected that the way coexistence is being implemented in the EU is placing an unfair burden on the biotech industry and those who wish to grow GM crops. They assert that many countries' approach to coexistence is constraining farmers' liberty to grow GM crops. In the journal, *Nature Biotechnology*, a 2008 article asserts that EU is going to "ridiculous lengths" to prevent cross-contaminations (Ramessar et al. 2010). In the same journal, a 2010 article wonders if the coexistence policy in the EU, which was intended to remove the moratorium on GM crops, was simply a backdoor way of reinstating the moratorium (Devos et al. 2008). One major complaint is that some countries in Europe require excessively large and inflexible distances between GM and non-GM crops to prevent cross-pollination. They claim that these isolation distances are not scientifically justified and make it too difficult and expensive for farmers to grow GM crops (Ramessar et al. 2010). Ramessar et al. assert:

The scientific process appears to have been discarded by the EU and its member governments in the case of GM agriculture. Not only are the thresholds for adventitious presence far stricter than for conventional crops, but the isolation distances implemented to achieve such thresholds are arbitrary, excessive and appear to be politically motivated rather than to reflect scientific reality (Ramessar et al. 2010).

In summary, some argue the way coexistence is being implemented in the EU, specifically, the large isolation distances required by some member states, is "jeopardizing farmers' freedom of choice to grow GM crops" which "contradicts the European coexistence objectives" (Devos et al. 2008).

Coexistence in the USA

Like the EU, the USA is officially committed to coexistence and freedom of cropping. But unlike the EU, the USA rejects both labeling GMOs and establishing thresholds for GM adventitious presence in organic and non-GM products. This is largely because the USA applies the principle of substantial equivalence to biotechnology, whereas the EU applies the precautionary principle. The argument against labeling asserts that labeling GMO crops implies that GMOs are different than traditional crops and may pose greater risks to human and environmental health, which contradicts the principle of substantial equivalence. Furthermore, because organic standards in the USA are process based, as long as GMOs were not used in the production process, GM adventitious presence does not violate standards,

and products containing GM adventitious presence can be labeled USDA Organic. Thus, on the issue of threshold levels of GM material in organic product, the relevant US regulatory agencies are currently silent. For many organic advocates, regulatory silence does not equal neutrality. They believe it is creating a system that places an unfair burden on organic and non-GM producers to achieve coexistence.

In the absence of government labeling and mandated thresholds, a nonprofit, natural foods advocacy group has stepped into that role. To honor consumers' expectations and the philosophical commitments of organic producers and wholesalers to exclude GMOs, organic companies are starting to participate in the Non-GMO Project. The Non-GMO Project is a third-party verification certification program that sets standards for detection of GM material and reduction of the risk of cross-contamination. The Non-GMO label follows the EU's 0.9 % threshold. Crops exceeding this level cannot be certified non-GMO. Many large organic companies are participating in the program and refusing to purchase organic products that do not meet this standard.

Because the USDA does not label GMOs, there are no regulations mandating measures to prevent GM adventitious presence. However, organic consumers still have an expectation that organic products are "GM-free." This means that the burden of preventing GM contamination falls on organic and non-GM producers. The argument for placing the burden on organic growers and non-GM producers to "fence-out" GM material asserts that because these farmers receive a price premium for organic and non-GM crops, it is their duty to take the necessary measures to meet the standards of their contracts. If that requires minimum levels of GM material through non-GMO certification or by meeting EU standards, it is the grower's responsibility to assure they meet those levels. In the USA, adventitious presence is a risk that the organic and non-GM farmers must accept. To mitigate this risk, organic farmers must learn if their neighbors are growing sexually compatible GM crops and take measures like creating buffer zones and staggering planting to mitigate GM contamination.

Many organic and environmental groups believe that the current system in the USA is unfair. They argue that the biotech industry and GM farmers should bear more of the burden for keeping GM "pollution" out of organic and GM crops. For example, in a 2010 position paper titled "GMO Contamination Prevention and Market Fairness," the National Organic Coalition asserts that "Farmers who seek to avoid GMOs must not continue to be solely responsible for contamination prevention an cleanup and/or be forced to give up growing certain crops. For this to happen, direct government intervention is needed to protect livelihoods and local economies."

In 2012, the USDA Advisory Committee on Biotechnology and Twenty-First Century Agriculture (AC21) published "Enhancing Coexistence," a report to the Secretary of Agriculture that sheds light on the debate over cross-contamination and coexistence in the USA. The Advisory Committee is composed of a diverse group of stakeholders representing both the organic and GM sides of the controversy. The consensus recommendations focused on measures to facilitate coexistence and compensation. Importantly, the report affirms the principle of substantial equivalence as a foundational premise for regulation, stating that "the presence of genetically engineered crops does not create risks that are novel in agriculture" (AC21). (Several committee members in the comment section objected to this premise and referred to the precautionary principle instead.) In general terms, the report places the major emphasis on educational outreach to farmers and others involved in the food production system as a means of achieving coexistence. These efforts would aim at building farmer-to-farmer cooperation and local voluntary solutions. In addition, the report recommends further research on promoting coexistence in US agriculture. Interestingly, those on the committee associated with the agricultural biotechnology industry had far fewer reservations with the report than those who were associated with the organic industry. In the comment section, the opposing committee members voiced that these recommendations favored the GM industry.

One member commented that "'successful' coexistence means that the USDA must take its finger off the scale in favor of biotechnology." This member felt that the biotech industry and GM producers have "no skin in the game, and the financial burdens remains squarely on the backs of non-GMO agriculture." Several who signed the consensus report did so to support the effort as a "step in the right direction," but felt that it fell far short of recommending a system that would be fair to organic and non-GM farmers. One member felt that the "[the committee] did little to allocate responsibility for minimizing and preventing problems." Another commented that "The farmer choosing to grow non-GM crops should not be expected to bear the primary responsibility and costs for avoidance strategies and/or possible market loss due to something they have no control over." In summary, the above comments reflect the opinion of many involved with the organic industry in the USA: the system is unfair to organic growers, and the report's recommendations for education, voluntary cooperation, and further research fall short of distributing the burdens of coexistence fairly.

In regard to the question of compensation, the report recommended that "compensation mechanisms should be modeled on existing crop insurance." This means that organic and non-GM producers would bear the burden of buying crop insurance to be protected from the risk of financial loss due to GM adventitious presence. The report also recommends that the government take steps to keep the insurance affordable. While all but one member signed the consensus report, there was widespread disagreement on the compensation mechanism.

In general, the reaction to the AC21 report from the organic industry was largely negative. There was a feeling that both the coexistence recommendations and the compensation mechanisms favored the biotech industry and GM growers.

The contrast between the EU's and US's approach to coexistence makes clear that the decision to apply the precautionary principle versus the principle of substantial equivalence is a watershed issue. To review, the precautionary principle places a burden on innovators to demonstrate that new GM crops are safe. GM crops are treated differently than traditional crops because they are seen as creating novel health and environmental risks in agriculture. Substantial equivalence assumes that GM crops pose safety threats that are similar traditional crops. In broad terms, GM crops should not be treated differently than traditional crops. As demonstrated above, using the precautionary principles or the principle of substantial equivalence leads to conflicting answers on the four basic coexistence questions regarding setting threshold levels, instituting mitigation practices, assigning duties, and providing compensation.

Despite the large body of literature on cross-contamination and coexistence, more research needs to be done on ethics of applying the precautionary principle versus substantial equivalence to this issue. Further, more inquiry and discussion are needed on the ethical issues arising from the four basic questions (listed above) requisite to achieving coexistence. The final issue that requires attention is the moral theory used for framing the conflict over cross-contamination, which is the subject of the final section.

Two Moral Theories for Framing Cross-Contamination

The long-standing debate in political philosophy between liberalism and communitarianism provides a lens through which to view the controversy over cross-contamination and an area for further ethical research.

As has been seen, the notion of coexistence is grounded in liberalism as it is premised on freedom of choice, state neutrality, and the harm principle, thereby leaving the difficult moral and metaphysical debates between GM and organic agriculture for individuals to decide. By way of contrast, the moral theory of communitarian holds that it is not possible or desirable for the state to remain neutral on questions of the good or the good life. It asserts that liberalism's focus on individual choice misunderstands the nature of the relationship between human agency,

morality, and politics. For communitarians, political structures and human character are ultimately shaped by conceptions of the good and the good life. Below the surface of the controversy, the debate about cross-contamination is driven by deep disagreements about food, agriculture, and the good life. The coexistence framework may not be adequate to resolve these disagreements.

Individuals on both sides of the debate argue that coexistence between organic agriculture and technologically driven, intensive agriculture, which includes biotechnology, is ultimately not possible or desirable. On the one side, advocates for biotechnology have argued the organic movement is a dangerous impediment to the scientific and technological progress needed to feed a rapidly growing world population sustainably (Trewavas 2001, 1999). This position is more than a technical argument about solving the equation of production and population through innovation: it entails a vision of the relationship between science, technology, food, agriculture, and the good society. On the other side, organic advocates argue that biotechnology furthers an unsustainable and unjust agricultural system. Advocates for organic farming, agroecology, and neo-agrarianism hold that GMOs are incompatible with a vision that harmonizes the relationship between food, agriculture, the environment, and the good life. One of the central points of contention between these competing visions of agriculture and the good life is the goal of cultural and biological diversity.

Technologically driven industrial style agriculture has greatly increased crop yields. Production and efficiency are the central values associate with of this vision on the relationship between food, agriculture, and the good life (Thompson 1995). However, in increasing efficiency, this approach has reduced cultural diversity (e.g., the preservation of small farms and farming communities) and crop diversity, both considered as goods by organic farmers and agroecologists (Altieri 2005). The norms inherent in these contrasting visions of food and agriculture may be incompatible. On this deeper level, then, the cross-contamination controversy is about the meaning and significance of agriculture and food. If this is true, then communitarian moral theory might be a more profitable way of framing and investigating this controversy. Therefore, along with research on the ethical issues arising from the application of the concept of coexistence, another line of research would question the liberal framework that undergirds coexistence using communitarian moral philosophy.

Summary

This entry describes the controversy over cross-contamination of crops in horticulture due to the conflict between organic, non-GM, and GM crops. It also identifies the central ethical questions that need to be answered to make coexistence between these different cropping systems fair or just. In addition, it points out the importance of the precautionary principle, and the principle of substantial equivalence has played in providing alternative perspectives in distributing the risks, burdens, and responsibilities of achieving coexistence. This was done by contrasting the EU's and the US's approaches to coexistence. Finally, this entry suggests that research into alternative moral theories, liberalism, and communitarianism and the controversy over cross-contamination could shed light on the nature of this important moral and political debate.

Cross-References

- ▶ Biodiversity
- ▶ EU Regulatory Conflicts Over GM Food
- ▶ Food Labeling
- ▶ Transgenic Crops

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Cuban Agriculture

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Synonyms

Biofertilizers; Castro; Cuba; Green revolution; Integrated pest management (IPM); Reanimation of the economy; Revolution; Special period; Sugarcane

Introduction

Cuba has a complicated history which has shaped its landscape and impacted its people in many ways. Due to its geographical location as an island in the Caribbean it has had an extraordinary level of dependence on its lands and natural resources for commerce and trade as well as support of its people. Cuba's landscape is highly heterogeneous including high mountains, steep grades, long low grassy fields historically used for grazing animals and wide flat expanses with rich soils that have been used extensively for agriculture. The land use practices on the island have varied quite significantly over time ranging from a focus on cattle, tobacco and sugar. Cuba's recent agricultural history is intricately linked to its international relations with the Soviet Union as well as that country's collapse in 1990. Cuba's total dependence on the Soviet Union for such a long period of time made the period after 1990 especially difficult for the Cuban people. There is also the ethical side of the Cuban people's struggle linked to food security issues.

To fully understand the complexities of Cuban agricultural history and its ethical implications for the Cuban people and other involved parties, it is necessary to provide a brief history and evolution of agricultural land use before examining the important ethical issues. First, the major significant foci of Cuban agriculture in terms of key imports and exports through time will be discussed. Second, the scientific advances that have been made in organic agriculture due to lack of expensive pesticides and herbicide availability will be considered. These advances have been necessitated as a result of an absence of funds to import chemical treatments for pests and fungi infestations. Third, the ethical dimension of Cuban agriculture in terms of modernization possibilities and who is partnering with Cuba to improve their food security is examined. Finally, recommendations are offered for a way forward and lessons learned in Cuba for the people and the potential political paths that Cuban leadership could take to lead their people towards a more stable food economy.

Background and History

Significant Historical Foci of Cuban Agriculture

Cuba's import and export history begins with the establishment of towns along its coast in the early 1500s. The first settlements were established by

Diego Velázquez, a lieutenant to the Governor of Hispaniola: Nicolas de Ovando. Nuestra Senora de la Asuncion (now Baracoa) was the first settlement from 1511 to 1512. From 1512 until the mid-1700s most new cities were established near Havana, although Velázquez selected Santiago de Cuba as Cuba's first capital because it had an outstanding harbor and was near the major trade routes at that time (Gebelein 2012). During this early colonization the initial settlements were either near ports or close to natural resources that could be easily transported to a port city. It was also during this time that one of the first major examples of human subjugation occurred on Cuba. The Spanish needed labor to exploit their newfound resources in Cuba and the native Indian population was proximally, if unwillingly, available. The labor needed at that time was diversified and hands were needed to plow and maintain the agricultural sites for the settlers in that area.

Velázquez first enslaved the local Indian populations and forced them to labor for the Spanish. A local chieftan who had seen the inhumane methods Velázquez employed to subdue and exploit the Indian population in Hispaniola attempted to lead an opposition against Velázquez failed when he was caught and burned at the stake. Over the next several decades the Indian population fell because of illness passed on by the settlers, escape from the island, integration into the settlers' population, death due to brutal slavery practices, or from revolts (Gebelein 2012).

Tobacco was one of the crops grown before Spaniards settled the island. Columbus witnessed the Cuban Indians smoking it before he knew what it was and was a regular trade item between the Spaniards and the Indians. The Spaniards did not recognize its potential until well after colonization was established. They discovered the further west tobacco is grown, the better the tobacco. Drawing a quality line from east to west the tobacco industry has the *Mayari y Gibara* in the Oriente Province. One of the factors that separate tobacco from other crops is that it is labor intensive to grow. There are many small and time consuming steps to cultivating a quality tobacco plant. A second and far more important example of high maintenance crop is, of course, sugar.

Sugar was not immediately impactful on the Cuban landscape or to its economy. Despite the fact that sugarcane was introduced to the island in the early 1500s, it was not until 1590 that sugar mills were introduced to produce commercial sugar. Sugar then became a very popular export but the fact remained that it was extremely labor intensive to get the final product to market. From clearing forested area to planting, maintaining and processing the cane took many laborers and much time. Herein was the problem of available ready labor. However, when the British captured Havana they also introduced black slavery to Cuba. These thousands of African slaves became the labor force that Spain needed to support an increased production of sugar. This and other related events began a chain reaction in Cuba in response to an increase in labor force and a rising demand for Cuban products.

The demand for sugar has not been steady or altogether predictable. The rise and fall of sugar has directly impacted Cuba's foreign relations, the economic security of the island and its people as well as the stability of the government and its ability to provide for its people. For example, sugar prices rose steadily in the early 1900s, and by 1913, the majority of the U.S. investment in Cuba was in its sugar valued at approximately 200 million U.S. dollars. Cuba was also producing 12 % of the world's sugar supply at this time. The First World War caused a dramatic increase when The English Royal Commission began importing raw sugar from Cuba. This trading relationship lasted throughout World War I. By 1918 Cuba had the largest sugar enterprise in the world, however from June 1920 to December 1920, the price of sugar dropped approximately 14 cents per pound due to European competition. This was devastating for the Cuban economy, laborers left, and banks on Cuba closed; forcing President Menocal to declare a moratorium (Thomas 1998). Things did not get much better as years passed. The United States' share of the Cuban sugar market dropped from almost 50–25 % by 1933. These conditions, not surprisingly, led to economic crisis on Cuba with more

mills closing, employment opportunities in Cuba fading, labor fleeing the island for better opportunities elsewhere, and a dismal international market reflecting bad financial times for the island. Cuba's economy then began to improve while its people, particularly its poor, began a slow decline. When Batista returned for a second term as Cuba's president, foreign investors began reinvesting in Cuba. Mining operations increased with substantial U.S. investment for extraction of cobalt and nickel. Tourists began returning to Cuba and the tourism industry became one of Cuba's most important sectors of revenue. Under Batista the cattle industry increased to compete with the highest ranking cattle industries in Latin America. Despite this, for 9 years, until 1958, sugar accounted for 85 % of Cuban exports. This monoculture approach was a huge weakness in terms of being totally dependent on the international market's price fluctuations. The second major flaw in Batista's economic structure was the majority dependence on the United States for imports and exports. Approximately 75 % of Cuban imports came from the United States and almost 65 % of Cuban exports were consumed by the U.S. market (Suchlicki 2002). Most of Cuba's people did not fare well under Batista's rule either as he ultimately befriended and rewarded the largest sugar plantation owners resulting in a larger disparity between rich and poor Cubans, continually exploited Cuba's many commercial investments including agreements with the American mafia that were linked to nefarious businesses based in Havana (Olson 2000). He also quelled riots and public discontent with violence and murders using his secret police to instill fear into a populace already discontent from continual economic downturns and his oppressive regime. Cuba was poised for another revolution.

When Castro took power from Batista in 1959, major changes took place that directly and fairly quickly impacted the Cuban economy and its people. One of the first and most devastating to the economy was the quick erosion of the U.S. Cuba political trade agreements. For the first few months of Castro's presidency, he continually reiterated his opposition to U.S. financial interests and control of assets in Cuba. However, he allowed business to continue as usual during this period. During this time the Eisenhower administration waited to see what would ultimately become of Castro and his policies, and had no real response to Castro's condemnation of the United States' involvement in Cuba. Yet the relationship between Cuba and the United States became far more strained when the Agrarian Reform law was enacted. It initiated agricultural expropriations which the U.S. formally objected to but these complaints had no influence. The Reform Law was quickly followed by other attacks on U.S. foreign investments including mining and petroleum interests. The relationship between the two countries deteriorated further when, in February 1960, Castro signed a key trade agreement with the Soviet Union that stated Cuba would receive oil for sugar. However, a few months later both U.S. and English refineries declined to process Soviet oil. Concurrent to this, the U.S. president was granted authority to curtail foreign sugar quotas as his discretion. In a reactive retribution, Castro nationalized those oil companies that had refused to process the Soviet's oil. One month later the U.S. eliminated its request for its remaining order of sugar imports from Cuba for the year. Castro continued to nationalize all oil companies on Cuba for the next few months. In retaliation the U.S. pronounced an embargo on most goods exported to Cuba, withdrawing its American ambassador to Cuba shortly thereafter (Suchlicki 2002). The U.S. amended the Sugar Act of 1948, which has given preferential treatment to Cuba is the form of the majority of the sugar market quota, to *only* restore Cuba's sugar quota if it returned to a "free world", or free of socialist ideologies. Shortly thereafter in July 1960 the Soviet Union stated its willingness to buy the U.S. quota share of sugar. In fact, the Soviet Union and Cuba came to an agreement whereby the Soviets would buy at least five million tons of sugar at a much higher price of US$125/mt (5.67 cents per pounds) (Alvarez and Castellanos 2001). Additionally, since Cuba no longer had access to the imports it needed from the U.S. in terms of farming fertilizers, equipment, food, et cetera; it now

began to depend largely on its new trade relationship with the Soviet Union for these requirements.

One of the key things to note here is that without the Soviet's saving relationship with Cuba, Castro would have been in dire straits to provide for his people and find such an all inclusive importer of Cuba's goods. This situation should have highlighted the fact that dependency on a monoculture is not safe or predictable in a world market especially when political ties become strained. Cuba's major exports in the early 1960s were sugar, tobacco, nickel and rum, with sugar eclipsing all others. Instead of diversifying however, and heeding this clear economic warning, Castro continued with a focus on increasing sugar production and exports. In fact, not only did Cuba not diversify its exports, it increased its sugar quota markets to include Eastern Europe, China, and other countries which added to the total export demand. These new demands amplified sugar output levels to just over eight million metric tons of sugar per year. Castro's economic plan was to achieve ten million metric tons of sugar by 1970. This did not happen mostly due to his miscalculation of agricultural production potential and underestimation of essential manufacturing investment (Alvarez and Castellanos 2001).

The Special Period

The next phase of Cuban agricultural history was spurred by the fall of the Soviet Union and the strengthening of the United States blockade. With the Soviet Union in complete disarray, Cuba lost its greatest trading partner. This was underscored by the fact that 85 % of Cuban trade had previously been with the socialist bloc of Mutual Economic Assistance (CMEA) and almost all of those contracts were done in nonconvertible currency. The combination of these things was devastating to the Cuban people because commercial trade fell by more than 90 % after the fall of the Soviet Union. For example trade with Cuba dropped from $8.7 billion in 1989 to $750 million in 1993. Furthermore, Soviet oil imports to Cuba plummeted 90 % from 13 million tons in 1989 to 1.8 million tons in 1992. Every basic foodstuff, grain and all previously available consumer goods became scarce or unavailable and the importation of raw materials and spare parts critical to multiple industries in Cuba became completely unobtainable. Impacts to agriculture were also significant. Fertilizer imports to Cuba declined 80 % in only a few years. The consequences of these combined events led quickly to fuel shortages resulting in closed factories and many industrial plants as well as a serious shortage of consumer goods (Gebelein 2012).

This phase was coined the Special Period (*periodo especial*) and lasted from 1990 to 2000. Farming equipment such as trucks and tractors were replaced by livestock and farm animals since there was no further access to spare parts or fuel. Out of necessity there was a much greater focus on maximizing organic farming methods such as IPM (Integrated Pest Management), and vigilant crop rotation to get the most out of soil nutrient retention and minimize weed invasion (Gebelein 2012). However, despite these efforts, this period was marked by economic depression, agricultural stressors, and a forced end of a dependence on the Soviet Union. Cuba became truly marooned from the global marketplace when trade relations with the Soviet bloc disappeared (Pérez 1995).

Cuba's isolation was not complete however. In 1992, the United States issued an executive order which prohibited ships that had traded with Cuba to enter U.S. ports. This resulted in a major decrease in the number of countries (and companies) willing to conduct trade with Cuba (Thomas 1998). Compounding an already serious situation, that same year the United States passed the Torricelli Bill, also called the "Cuba Democracy Act." This act required that subsidiaries of U.S. companies that operated in third countries were not allowed to trade with or invest anything in Cuba. If a country were caught doing so in violation of this act, the U.S. stipulated that it then had the right to withhold debt relief, free trade agreements and any economic assistance with countries that gave aid to Cuba (Pérez 1995). This situation became quite dire very quickly for the Cuban people.

The Green Revolution

Just before the crash of 1990, Cuba had established steps towards its Green Revolution, with the assistance of the Soviet Union. It has also been called the "Soviet Agricultural Revolution" as well due to the Soviet assistance in this project (Warwick 2001). This period occurred from 1984 to 1991 and the goal was, not surprisingly, focused on increasing agricultural output by permitting farmers to grow crops in areas that had been previously protected by law. Sadly, this led to extensive forest clearing and the destruction of other native vegetation communities that had previously been protected and left undisturbed. The Green Revolution was mostly focused on the expansion of sugarcane cultivation, again adding to the dependency on the Soviets for their sugar exports, and increasing the need yet again for imported pesticides, farm equipment and oil, and hybrid seeds (Rosset 1997; Warwick 2001).

Reanimation of the Economy

The final period of discussion is the Reanimation of the Economy which also began in the late 1990s lasting until, some would argue, 2011. Here is the first inkling of hope in the transition from the heavy dependence on chemical intermediates to more natural biological agents in the agro-ecological conversion process that scientists have exploited for large scale farming areas (Funes 2002; Febles-González et al. 2011). There were also successful transitions to organic pesticide management approaches and use of organic nutrients for fertilizer as well. In spite of these advances, in 2007, there were only approximately 4.9 million acres of land actively cultivated, even though there were just over 9.8 million acres of fertile land available for farming. The Cuban government made massive efforts to encourage farmers to plant food. Nonetheless this did not last throughout the Reanimation period and was largely unsuccessful. From 1999 to 2007 Cuba's total cultivated land fell 17.5 %. While this decrease is an island-wide average, there were decreases in every province of cultivated lands during this period. Thus while Cubans may have had access to fertile lands and wanted to farm them, they had no access to the necessary farming tools or resources to produce any kind of crop yield. The Cuban government had set completely unrealistic goals with the Reanimation Proclamation and the Cuban people had no way of achieving these lofty aspirations (Febles-González et al. 2011). However, while this historical background has painted a dire picture of the conditions in Cuba regarding food security for its people, there have been impressive innovations and creative movements by the government and its people to improve conditions.

Scientific Advances in Organic Agriculture Due to Lack of Expensive Pesticide and Herbicide

After such a historical downturn of the economy based largely on heavy foreign dependence and a commercial monoculture, Cuban agriculture has refocused on sound agro-ecology practices. The main goals of this include fostering rural employment, strengthening the social network between rural and urban dwellers, utilizing appropriate technologies to increase productivity and above all achieve food security and greater independence from foreign countries (Febles-González et al. 2011). There have been many attempts, some successful and some not, of Green Farming approaches. Interestingly, these greener, organic approaches were in existence for many decades, but they were never mainstreamed because of dependence on the soviet imports for pest control, herbicides and pest management. For instance, the parasitic fly *Lixophaga diatraeae* was used against a cane boring pest in approximately 95 % of the cane on the island since 1968. Predatory ants (*Pheidole megacephala*) were used in the 1980s to control the sweet potato weevil *Cylas formicarius*.

IPM (Integrated Pest Management) was integrated into national policy in 1982 but not mainstreamed until the beginning of the Special Period. IPM successfully uses a number of specific insects for weed control and plant disease approaches to reduce reliance on chemical pesticides. For example Cuban scientists have created pesticides which are extracts from plants like the neem tree. At the close of 1991, roughly 56 % of Cuban agriculture was treated using organic biological controls (Gebelein 2012). Another

example of better agro-ecological practices is crop rotation. During the height of the monoculture boom, this was not done much throughout the countryside. One of the little known reasons for rotating crops is to out compete the weed community. For example planting sorghum or corn, after its harvest, planting potato, harvest the potato, and then back to sorghum or corn again. Planting these crops in this particular order in combination with natural herbicides, was discovered to prevent feverfew or Mugwort (*Parthenium hysterophorus*) and additional Dicotyledonous annual weeds (Rosset and Benjamin 1994).

Ethics in Cuban Agriculture

The Cuban People and Potential for Food Security

The history of agriculture and food security in Cuba demonstrates that the Cuban people have been victims of failed leadership in and political enemies of the socialist state of Cuba. It is a testament to them that IPM has succeeded in several types of crops. More recently, the leadership of Cuba has realized that in order to feed its people and succeed without total dependence on another country, it must *involve* its people in land ownership and provide the tools and policies necessary to support local efforts rather than a top down approach. The Soviet-style, large-scale food production system worked fairly well with the substantial economic backing of the Soviet Union and importation of farm machinery, pesticides and herbicides that were not available internally. However, when these resources and support disappeared the people suffered in terms of obtaining basic nutritional needs for a very long time. In 1990, Castro further defined the Special Period as the Special Period in Peacetime, which proved to be the basis for a new structure to support basic food necessities for the Cuban people. More specifically, this was the turning point for Cuba towards a low external input production, and an organic agro-ecology approach which included reconstructing Cuba's agricultural infrastructure to break up large scale state farms into smaller entities under more direct supervision by local managers. This new management approach also included government support of private sector famers' markets and the development of urban agriculture in the cities, towns and more rural areas. Involvement of the people was also realized with attention to a new importance placed on farmer-to-farmer exchanges, on farm research and agro-ecological training for scientists and farmers (Rosset and Moore 1997).

Ethical Lessons Learned

There are two main lessons we may draw from Cuba's agricultural history. The first is couched in political dominance. Given the history of Cuba's decision to be completely dependent on a monoculture of sugar, it eventually led to almost total dependence on the Soviet Union to sustain an inflated economy. The economic success was not sustainable due to inflated sugar prices in exchange for Cuba's agricultural imports. The crash of the Soviet Union put the entire Cuban economy in dire straits for many, many years. The reason such dependence is linked to ethical concerns for Cuba's people is food security. Because of poor long-term planning by the Cuban government, its people have suffered and have had to quickly develop ways to sustain themselves at bare minimum standards of living and caloric daily intake. The people have also been prevented by Castro from expanding into revenue generating opportunities for themselves to increase their standard of living by a dictatorship of forced socialism. The important links here between Cuba's agricultural history, its leadership and its people is an issue of economic equity. There should have been an effort made towards a reduction of poverty through improved access to such entrepreneurial opportunities as well as access to improved farming technologies and sustainable practices. Unfortunately this did not occur and inequity increased dramatically between Cuba's few rich and many poor. Having first the United States and then the Soviet Union as a primary benefactor did not ultimately prove viable in the long term. Therefore the alternative is a more sustainable way forward.

The second major lesson is addressing the lessons learned and potential application of those lessons in the future. How has Cuba begun to recover from this failed status? Currently, while smaller scale growing culture is increasing in the farming communities, urban agriculture is a fast growing segment of getting nutritional requirements to the Cuban people. While urban agriculture is not the only answer to the nutritional deficiencies of the Cuban people, it is fast becoming a sustainable solution to food security in Cuba and indeed is encouraged by the government. And while the allowance of this practice is not the solution to Cuba's food crisis, it is playing a large part in Cuba's recovery from the crisis caused by the collapse of the Soviet Union (Allen 1999).

The Recognition of Change

The Grupo Nacional de Agricultura Urbana (GNAU) now recognizes and supports four major types of urban agriculture. The first is called *patios* that Cubans are encouraged to plant for their own households, although they are allowed to sell surplus vegetables and fruits. As of 2012 there were 400,000 *patios* officially registered which entitles the owner to reduced prices on plant supplies. *Parcelas* are unused parcels of land that an individual is granted access to plant and may keep for his own as long as a certain level of crop production is met each season. There are also the *organoponico*. This unit is for production in long rectangular plots approximately 1 m by 15–30 m. They are slightly raised beds. These units have irrigation, superior soil and other modifications beyond the normal plot of land given to an individual. Finally, there is huertas intensiva (intensive garden), which are comparable to the *organoponico* except they are at ground level and are not raised. The important things to note here is the first two are recent evolutions of space that recognize the importance of the self-supporting individual. This is a stretch from the total domination of agriculture several decades ago. The second two have been in existence since the 1980s and their success is a tribute to their continued existence (Koont 2011).

Summary

Cuban issues of food security and ethical concerns are vastly complex. The history alone has occupied hundreds of pages in journals, books and other scholarly works. The overall lesson learned here is based in diversification of economic interests and remembering to empower the individual as well as the collective. When Castro took power, he took back the capitalistic stance that had controlled Cuba's interests for so long. However, history seems to have proven that he swung too far towards total control over his people, the land and focused to closely on a monoculture that proved ultimately to be the country's demise due to the trade of capitalism for a total dependence on a country with similar values. The background and way forward presented here are only a small pixel of a portrait that we hope, over time, paints a picture of sustainable living, a healthy population and independent country that can stand strong and support its people.

Cross-References

- ▶ Conservation Agriculture: Farmer Adoption and Policy Issues
- ▶ Economy of Agriculture and Food
- ▶ Food Security
- ▶ Food Security and International Trade
- ▶ Urban Agriculture

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Culinary Cosmopolitanism

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Synonyms

Gastronomic multiculturalism

Introduction

The meaning attributed to practices of consumption and production of food that are deeply tied to identity and community. While "food adventuring" or "culinary tourism" may be forms of colonialism and means of accruing cultural and social capital, they may also contribute to the formation of cosmopolitan subjects. This entry provides an overview of the history of cosmopolitanism as a philosophical construct and moral project and details the ways in which cosmopolitan engagements with multicultural foodways can be spaces of "hopeful intercultural encounters."

Definition

Cosmopolitanism is an openness to and willingness to engage with cultural Others. *Culinary* comes from the Late Latin *culina*, meaning "kitchen," derived from Classical Latin *coquere*, or "cook." The "culinary arts" are popularly understood to be the art of cooking, in this case, a fine art, or sometimes equated with *haute cuisine*.

Culinary cosmopolitanism can be understood to refer to practices of consumption and production (provisioning, cooking, eating, and feeding) that are linked to the development or manifestation of cosmopolitan attitudes. Although culinary cosmopolitanism is sometimes used synonymously with "gastronomic multiculturalism," the latter is simply descriptive of practices of dining within multicultural settings, whereas the former is posited as a moral project of sorts, a conscious aspiration to genuine openness and engagement with cultural Others.

A History of Cosmopolitanism

The concept and promotion of cosmopolitanism are generally credited to the Cynics and the Stoics before being taken up again by Kant during the Enlightenment. Diogenes, considered one of the founders of Cynicism, when asked where he came from, said, "I am a citizen of the world [kosmopolitēs]," thereby flouting the importance and exclusive rights of citizenship of his time. Kant's moral cosmopolitanism posits that all human beings are worthy and deserving of moral concern and that they are also all capable of understanding this principle and creating a universal system of law to which all nations should ascribe.

Arising out of this moral universalism is "political cosmopolitanism," which subsequently establishes cosmopolitanism as oppositional to nationalism (Hannerz 1990). According to this formulation, one cannot simultaneously be both nationalist and cosmopolitan or form strong attachments to both the nation-state and the world. If one is a cosmopolitan and therefore a "citizen of the world," then how can one also

be committed to what is essentially an exclusive particularism (the nation)? However, this concept has been critiqued on a number of points, for example, as "rootless" (and so unable or unwilling to engage with the location in which they mostly exist, where they might hope to do the most "cosmopolitan good" were they more attached) and as "deracinated intellectuals" and elitists (Robbins and Cheah 1998; Beck 1998; Werbner 2008; Nowicka and Rovisco 2009). Yet many maintain that cosmopolitanism and nationalism are still antithetical, largely due to the exclusive imaginary inherent in nationalist discourses, but that more local attachments can work to undermine nationalist belonging by creating "a critical space of local care across difference" (Wise 2009).

The most recent theories of cosmopolitanism come under the rubric of "cultural cosmopolitanism," broadly defined as an openness to and willingness to engage with cultural Others. Emergent theories encompass what Clifford (1992) described as "discrepant" cosmopolitanisms, most maintaining that cosmopolitans may retain local, particularized, and even nationalist identities and attachments. Some, such as Werbner, deliberately rescue the conceptual framework from elitist discourse – Werbner (2008) uses the phrase "demotic cosmopolitanism" in order to directly oppose the notion of it being purely elitist. Beck goes so far as to claim that "there is no cosmopolitanism without localism" (1998), rejecting the earlier elitist distinctions made by Hannerz (1990) between the cosmopolitans and the locals, where cosmopolitanism was painted as essentially the "class consciousness of the frequent traveller" (or the domain of the white, male, middle class).

Beck has generated a significant oeuvre on cosmopolitanism, in which he argues that it is a process of "internal globalization" that creates what he calls "cosmopolitanization," the third of five stages in the social sciences' treatment of globalization (2009). When he first proposed his theory of "cosmopolitanization," Beck argued that nationalist thinking presupposes a monologic imagination, whereas cosmopolitan thinking is dialogic. That is, the cosmopolitan perspective is "an imagination of alternative ways of life and rationalities, which include the otherness of the other" (1998); it is "thinking and living in terms of *inclusive oppositions*." He goes on to argue for the social sciences to move on from "methodological nationalism" to "methodological cosmopolitanism," which will replace "the currently prevailing ontology and imaginary of the nation-state" (2009, p. xii).

Beck claims that the collection *Cosmopolitanism in Practice* (Nowicka and Rovisco 2009) "introduces a fifth phase, namely the question of what does cosmopolitanism in practice mean" (Nowicka and Rovisco 2009). He and the other contributors to that volume attempt to move beyond merely "prescriptive" or "descriptive" conceptions of cosmopolitanism and to "illustrate some of the ways in which cosmopolitanism can be used as an analytical tool to explain certain identity outlooks and ethico-political practices that are discernible in a variety of social and institutional settings" (Nowicka and Rovisco 2009). It is this fifth stage to which culinary cosmopolitanism belongs, identifying cultural and cosmopolitan identities and practices through everyday engagements with multicultural foodways.

Unravelling Food Adventuring from Culinary Cosmopolitanism

A risk in any study of cosmopolitanism is to mistake discourses of cultural adventuring, something seen frequently in culinary realms, for openness to and willingness to engage with cultural Others. In Ghassan Hage's view, "Anglo-" (shorthand for "Anglo-Celtic" or "Anglo-Australian," i.e., "white" in Australia) enrichment discourses create a sort of "multiculturalism without the migrants," which "conceives of ethnicity largely as an object of consumption" (1997). In this same vein, bell hooks has famously argued "...within commodity culture, ethnicity becomes spice, seasoning that can liven up the dull dish that is mainstream culture" (1993).

In Bourdieu's seminal work on social stratification and "taste," he gave us terminology such as cultural, social, and symbolic capital and the

concepts of habitus and fields (1979). Bourdieu's sociological study from the late 1970s argued that a person's cultural and social capital will be almost exclusively determined by inheritance, that is, by the class and situation into which one is born, with some effect from education. Hage (1997) makes a Bourdieuan argument that people not only consistently accrue cultural capital as they maintain their social distinctions, but that this does symbolic violence to ethnic Others in making them invisible or existing only insofar as they can "perform" their authentic ethnic selves for elite Others (usually Anglo in Hage's work in Sydney).

Hage argues via Heidegger that the discourse of value "places the dominant culture in a more important position than other migrant cultures" and that "while the dominant White culture merely and unquestionably *exists*, migrant cultures exist *for* the latter" (1998). In his discussion of the "White multiculturalist fantasy," Hage claims that in positioning migrant cultures as "exhibitions" in a sort of "multicultural fair" and Whites as the tourists "being enriched," the Whites have "blocked" the "reality of the ethnic eater" (1998).

On the one hand, this particular discourse is indicative of Anglo hegemony through discursively valuing Others' foods that "enrich" their lives. On the other hand, if one looks back to the history of most migrant restaurants, it is clear that the "ethnic eaters" were there first, and in many or most cases of such eateries, they remain present in significant numbers. In truth, many habitués of multicultural restaurants seek out those establishments that have a visible presence of "ethnic eaters" as a sign of "authenticity" and therefore, presumably, a higher quality (more pleasurable) dining experience (and, of course, a sign of their own distinction (Bourdieu 1979) as cosmopolitans possessing considerable knowledge of the Other).

Hage himself acknowledges this, claiming that "Cosmo-multiculturalism expresses a clear liking for ethnic cultural products that appear to exist in and for themselves. The experience is one of entering a restaurant that is not aiming to satisfy western needs but an ethnic clientele" (1997). Here Hage is contradictory on a number of points. First, if "cosmo-multiculturalists" have "blocked the reality of the ethnic eater," how can they be seeking verification of authenticity in the presence of the same? Second, according to Hage, the ethnic provider of food is interpellated as a powerless object of the nation if the cosmo-multiculturalist centers his discourse around eating, rather than focusing on the production and "gift" of the food. However, he argues that enjoying food that is (ostensibly at least) prepared not for the Anglo eater, but for a communal ethnic experience to which the Anglo feels privileged to partake as a sort of "trespasser," is "perverse." It's unclear what option Hage leaves the (presumed Anglo) culinary cosmopolitan that won't do symbolic violence to the migrant producer.

It is critical to the development of culinary cosmopolitanism to understand the ways in which all versions, Anglo or non, bourgeois or working class, and knowledge class or not, deploy cosmopolitanism as a way of making sense of a multicultural reality.

Heldke has written of the "culinary traveller" as someone "who moves into a cultural location other than one's own, either temporarily or more long term" (2003). She includes travellers overseas, domestically, or even just to "ethnic" restaurants in one's own town. Jennie Germann Molz, writing about culinary tourism in local Thai restaurants, argues that:

> by participating in a food system, the culinary tourist is expressing and reinforcing his or her own identity while exploring the identity of the other that is represented by that food system. [. . .] As Lucy Long suggests, while culinary tourism is "the intentional, exploratory participation in the foodways of an Other", it often results in "teaching[ing] us more about ourselves than about the Other." (1998:185). (Molz 2007)

To illustrate an example of Hage's "cosmo-multiculturalist" or Heldke's "culinary traveller," here's a sample from a post on a Sydney food blog:

> Sydney siders are well versed in all things Italian, if the number of pizzerias, trattorias and "Mama Mia's" are anything to go by, but there's always room for more eating, drinking and dancing in this town so "Viva Italiano," I say. (Leong 2009)

Here, Leong's celebration of "all things Italian" is exclusively Italian food – this is Hage's "multiculturalism without the migrants." And yet, importantly, does the reader know whether Leong in fact *only* celebrates "Italianness" for what it offers her in social distinction? Or does one also gain a better understanding of and therefore greater openness to Other cultures through their interest in the foodways of those cultures, even if that wasn't the initial goal? Can elitist practices of food adventuring be a mechanism that enables more cosmopolitan attitudes?

Hage's "cosmo-multiculturalism" has also been called "cosmopolitan capitalism," which Leong (2009) has critiqued as a "glossy magazine" version of cosmopolitanism – like Hage, Littler views this as a an elite lifestyle choice usually defined by habits of conspicuous consumption. Corpus Ong (2009), in his work on globalized media practice, cynically labels it "instrumental cosmopolitanism." In each of these arguments, the people in question would fit into Hannerz's (1990) opposition of "cosmopolitans" to "locals," where he went so far as to claim that transnational migrants were not "real" cosmopolitans as they so frequently have little choice in the migration (economic or humanitarian refugees, essentially) and only engage with the "host" culture in the manner of tourists, which is to say, a very shallow engagement.

In Bell and Valentine's (1997) chapter on food consumption in communities, the authors define cosmopolitanism as involving "the cultivating of 'globalised cultural capital' as a form of lifestyle shopping which, crucially, involves possessing considerable knowledge about the 'exotic' [or] 'the authentic'" which they point out is often referred to as a "colonisation or an intellectualisation of popular culture." Kothari and Pearson (2007) mull over the same concern, using the terms "boutique multiculturalism" and "culinary cosmopolitanism" to worry about the elitist and colonizing tendencies of such systems of valuing. However, they point to a more hopeful conclusion when they comment that "While the mainstream may seek to fashion itself as more interesting and cosmopolitan by eating ethnic food, this type of consumption can also signal an important openness to cultural difference."

While it is easy to see the Bourdieuan distinction of the knowledgeable cosmopolitan above, arguments such as Hage's or Bell and Valentine's leave cosmopolitanism in a rather cynical and sad theoretical space, leaving the ethnic Other little potential for agency and in fact seeming to contribute to the silencing of the migrant voice. Such a version seems to be critical of "possession of considerable knowledge" of the Other, which is surely in direct contradiction to ideas of belonging, in which being able to make meaning is essential (Williams 1961). It seems that what Hage is really criticizing is the cavalier attitude of those who are distinguished by their knowledge of the exotic, which is closely tied to Heidegger's discourse of valuing, rather than Raymond Williams' discussion of making meaning and belonging. In this case, it is perhaps more useful to interrogate individual, everyday attitudes rather than making sweeping generalizations. It is important to work with and against the potential contradictions inherent in the acquisition of cultural capital in order to understand what cosmopolitanism is and what benefits it can offer a multicultural society.

Rescuing "culinary cosmopolitanism" from its more recent elitist connotations by taking it back to its philosophical roots offers a way forward to understanding the importance of engagement with multicultural foodways in the development of cosmopolitan subjects.

Generally speaking, those who maintain that Hage's "cosmo-multiculturalists" are not "genuine" cosmopolitans are typically writing about elite Anglo populations, and much of the most contemporary theory around "banal" or "vernacular" cosmopolitanisms has focused on transnational migrant groups who are typically not of Anglo descent. Some of the most interesting work in this newer field comes from nonmetropolitan or "southern" academics and seeks to decenter the metropolitan, elite, white discourses in order to demonstrate instances of cosmopolitanisms all over the world (Werbner 2008; Nowicka and Rovisco 2009).

"Hopeful Intercultural Encounters" and Culinary Cosmopolitanism

In Amanda Wise's (2009) ethnography in the Sydney suburb of Ashfield, she argues that where she found "hopeful intercultural encounters," a common element was:

> certain forms of manners, recognition, gratitude and hospitality, which have the capacity to facilitate the development over time of forms of interethnic belonging, security and trust. Such interethnic social capital, as I term it, is an essential prerequisite for the creation of dispositions of the open, joyful and hopeful kind, full of possibilities for opening up to otherness.

Food and eating, which "are central to our subjectivity, or sense of self, and our experience of embodiment," (Lupton 1996) are therefore central to opportunities in which it is possible to develop "interethnic social capital." Not only is food an everyday visceral aspect of life, involving taste, emotion, and memory, it is a site of frequent exchange, whether as a commodity, a gift, or an act of nurturing. As Duruz puts it, "'eating together differently' [. . .] has become a recognition of the (here, mildly) disruptive politics of exchange – of food, of histories, of memories – at the table of global–local belonging" (2006). It is critical to the project of culinary cosmopolitanism, then, to understand just what does happen at the "glocal" table and to identify the points in the continuum of shopping/growing, preparing, feeding, and eating that offer the most enabling spaces for cosmopolitan praxis.

Summary

Culinary cosmopolitanism is part of a long history of people's attempt to be open to and engage with cultural Others. Through practices of production and consumption of food and foodways, people of all classes and ethnicities seek to understand and belong to a global community, often through very local attachments, and critically, over the table.

Cross-References

- ▶ Authenticity in Food
- ▶ Ethnicity, Ethnic Identity, and Food

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Culinary Tourism

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Synonyms

Cultural tourism; Food tourism; Gastronomic tourism; Sustainable tourism

Introduction

Culinary tourism is the focus on food as an attraction for exploration and a destination for tourism. Although food has always been a part of hospitality services for tourists, it was not emphasized by the tourism industry until the late 1990s. It now includes a variety of formats and products – culinary trails, cooking classes, restaurants, farm weekends, cookbooks, food guides, and new or adapted recipes, dishes, and even ingredients. While most culinary tourism focuses on the experience of dining and tasting of new foods as a commercial enterprise, it is also an educational initiative channeling curiosity about food into learning through it about the culture of a particular cuisine, the people involved in producing and preparing it, the food system enabling access to those foods, and the potential contribution of tourists to sustainability.

Culinary tourism involves numerous issues; many that accompany tourism in general as well as some that are specific to food. Because of culinary tourism's economic potential as well as its role in spreading and shaping food cultures, the ethics attached to it are very real concerns. It is a significant force in globalization and offers rich possibilities for intercultural communication and understanding. It is essential then that both scholars and practitioners recognize its complexity and potential. This entry offers an overview of issues connected to culinary tourism and some of the solutions that have been suggested for dealing with them. It also addresses competing definitions of culinary tourism as a field of study, since different approaches focus on different issues.

Issues: Definitions

Tourism based on food is known by several terms, and these terms reflect different approaches to it as a field of study as well as an industry niche. Perhaps the first was "gastronomic tourism," suggested by cultural geographer Wilbur Zelinsky in 1985 in an analysis of ethnicities prevalent in restaurants in the United States. Similarly, Bell and Valentine used "kitchen table tourism" in 1997 to address the virtual exploration of other food cultures through modern technologies. "Culinary tourism" was introduced in 1996 by folklorist Lucy Long as a humanities perspective on the meanings and implications of eating out of curiosity and was later refined to "the intentional, exploratory participation in the foodways of an other; participation including the consumption, preparation, and presentation of a food item, cuisine, meal system, or eating style considered to belong to a culinary system not one's own" (2004:21). Culinary tourism from this perspective is a negotiation of exotic and familiar, with otherness depending not only on an individual's or group's experiences but also including domains such as region, class, gender, religion or ethos, age, along with ethnicity or nationality of a food. It also includes all the activities and practices associated with food consumption.

Long's edited volume, *Culinary Tourism* (2004), helped establish the phrase in both the

humanities and the tourism industry, where it was adapted by the American-based International Culinary Tourism Association for tourism that features unique and memorable dining experiences. This shift to professional and commercial interests around tourism raised issues common to the distinctions between applied and "academic" approaches to scholarship and tourism in general, particularly in the idea of knowledge being used to exploit resources and tourists to profit the tourism industry.

Meanwhile, scholars in tourism studies and other fields, notably anthropology, were also studying the phenomenon and using other terms. Tourism scholar C. Michael Hall defined "food tourism" in 1997 as tourism in which the prime motivation for the tourist was a "...desire to experience a particular type of food or the produce of a specific region." Hall and Sharples refined that definition to: "visitation to primary and secondary food producers, food festivals, restaurants and specific locations for which food tasting and/or experiencing the attribute of specialist food production regions are the primary motivating factor for travel" (2003). The extensive publications by Hall and his colleagues take cross-disciplinary approaches in examining motivations of tourists and the development, management, and marketing of food tourism products. They also recognize the potential impacts of tourism beyond the industry, encouraging a research-based model for ethical tourism.

"Gastronomic tourism" used in 2002 by Anne-Mette Hjalager and Greg Richards is similar to "food tourism" in involving travel to food but is also presented as an emerging discipline recognizing both gastronomy and tourism as dynamic cultural constructions reflecting specific histories and contemporary interests. Pricilla Boniface's term "tasting tourism" is similarly used to understand the broader forces that have turned food and drink into tourism attractions (2002). She draws upon work in cultural studies to understand the nature of tourism in the modern world and how tourism can change the meanings of food. She also offers a framework for understanding the motivations of tourists, a significant issue within tourism studies.

Scholarship on culinary tourism has continued to grow so that it is now frequently discussed in journals and conferences in tourism studies as well as other disciplines, exploring the role of culinary tourism in identity construction, maintenance of cultural and culinary heritage, and defining cultural boundaries. Much of this scholarship also now emphasizes an understanding of how such tourism can be made sustainable and beneficial to all who are involved in it. This requires examining the impact of tourism on economies, environments, societies, and cultures of both the host communities and the tourists involved.

Issues: Economic

Tourism in general is a major global industry, expected to be worth $10.8 trillion and provide 296.2 million jobs by 2018. Culinary tourism is a growing niche within the industry, estimated to becoming stronger as more providers and tourists become aware of it. Culinary tourists are thought to belong to higher income levels, able to spend more money on other hospitality services accompanying dining experiences (lodging, tours, etc.), and to be better educated and more culturally sensitive. This makes them a desirable clientele, and governments and policy makers see this type of tourism as a positive force for economic development. Along with providing employment opportunities, it also creates markets for particular foods and food events. Because of the current emphasis on locally sourced ingredients, it also supports local food producers and can be seen as a way to insure that the food system in general is intertwined with and supporting local economies – the "multiplier effect" in which businesses supplying and supporting the tourism industry benefit from tourism activities (Gmelch 2010; Chambers 2010). This would, in theory, include such things as the farmers who supply the restaurants feeding tourists or schools training students in hospitality management or culinary arts.

The economic benefits of culinary tourism seem clearly positive; unfortunately, it is never that simple. Tourism in general depends upon the spending of individuals from wealthier nations.

This source can change due to weather, political events, natural disasters, and a host of other variables. Not only can host cultures' economics become dangerously dependent on such unstable tourism monies, but local food systems (and social structures in general) may also adapt to accommodate tourists needs. Also, tourism is frequently controlled by companies outside a host community who their own suppliers and bringing in their own staff (Gmelch 2010; Chambers 2010). This results in economic "leakage," with the money brought in by tourism leaving that community. Similarly, there is no guarantee that money made from culinary tourism is shared in equitable ways within the host community or used in ways that benefit the larger group. Furthermore, "branding," which is seen as a way to successfully commodify and market a region, locale, culture, or group's food, oftentimes focuses on one food or ingredient to the detriment of others, creating a monoculture, so to speak, again, an unreliable basis for an economy.

A particularly significant issue in culinary tourism is the possibility it has for "recoupling the food chain," bringing producers and consumers closer together without the middle links of processing, packaging, distributing, and marketing of food. Since culinary tourism can make tourists more aware of the food they are eating, it can also turn their attention to where that food comes from and how it is grown. Tourists can then create a demand and a market for food that is produced sustainably and locally. This, in theory, puts more money in the pockets of producers, by focusing on locally produced foods. This then "recouples" the food chain, moving consumption closer to production.

In theory, culinary tourism focused on local producers is more likely to spread the money equitably through the community. One issue, however, is that standard culinary tourism focuses on high-quality and memorable dining experiences. That means an emphasis on artisan production. Not all producers are able to fit those criteria, and not all foods will be attractive to tourists, so those producers are then left out of the tourist economy even though they may be necessary and integral to the local culture.

Culinary tourism is now being tied to economic development in a number of countries as well as in the United States. This is coming from governmental initiatives as well as the tourism industry itself. Some of the most interesting (and probably, most viable) are cooperatives of growers who band together and market their products along with their farms as tourism destinations. In this way, they ensure that they are all collaborating rather than competing with each other. They also then have more variety of products and activities to offer tourists, therefore attracting more tourists as well as giving them reasons to stay longer at their destination.

Within the tourism industry, ethical issues tend to boil down to a perceived need to balance competitiveness and sustainability. **Competitiveness** refers to the industry as a whole competing with other industries for markets and resources as well as individual businesses competing with each other within the tourism industry (and hospitality and travel industries).

Sustainability refers to the endurance of the resources used for tourism. This includes the physical resources (environment) as well as the economic ones. Tourists themselves are actually seen as a resource since businesses compete for them and ultimately depend on them for survival. Sustainable resources also include the local culture, traditional expressive forms that "add value" to a destination, and the social stability of the host community. The last is important since it translates into less crime, friendlier interactions between tourists and "natives," and better trained workers for the service industries connected to tourism. A broader perspective on sustainability identifies four "pillars" needed to ensure the endurance of resources: economies, environments, societies, and cultures. Culinary tourism involves and can potentially contribute to each of these domains.

In practice, these two issues are frequently in conflict with each other: short-term monetary profits oftentimes take precedence over long-term endurance of resources, particular in areas in which the local economy is inequitable. Also, the costs (negative impacts) and benefits (positive impacts) differ according to each participant

(stakeholder) – hosts (tourist destination culture and society), guests (the tourists), tourism providers (businesses), local governments, and the natural environment – in a particular tourism initiative, so that issues surrounding culinary tourism often have no single simple resolution. The World Tourism Association provided guidelines in 1996 defining sustainable tourism, and these are promoted, with varying success, for culinary tourism as well.

Issues: Environmental

Tourism in general can lead to depletion and degradation of environmental resources – land, water, air, flora, and fauna – when those resources are improperly or overused or if the amount of tourism activity exceeds the "carrying capacity" of a host community. Culinary tourism can have similar issues as well as ones specific to food if it promotes products that are threatened or unsustainably produced. (Travel to China for consumption of sharks fin soup would be an example.) Although some culinary tourists seek such "extreme eating" experiences or focus primarily on the aesthetic experience of food free of morality, many are aware of the environmental implications/impacts of their food choices.

Because culinary tourists, for the most part, want to experience food in its native habitat and sociocultural context, they offer an incentive to maintain those habitats. Also, they tend to want high-quality and artisan foods, both of which are frequently produced in sustainable ways – smaller farms, handmade rather than relying on technology, and possibly organically grown. They also tend to want to eat a variety of foods, which, in theory, can encourage protecting the biodiversity of an area. (Unfortunately, this last desire on the part of tourists often translates into importing foods that are not native or locally grown.) As the industry continues to grow, though, more businesses and tourists are aware of the potential impacts it can have and are more willing to work within the guidelines of sustainability.

Because of the obvious connections between food and the environment, culinary tourism projects by 2010 frequently emphasize locally grown food produced with sustainable farming methods. This brings money to those growers and helps to establish them as viable links in the food chain. This in turn can have a positive impact on the environment since fewer resources tend to be used with fewer links. Culinary tourism is also combined with ecotourism, a niche that focuses on tourism practices beneficial to a local environment.

Issues: Social

Tourism in general, but including culinary tourism, is frequently critiqued as reflecting colonialist power structures that have historically created and maintained inequitable social systems (Gmelch 2010; Chambers 2010). It does create a class system based on "hosts" and "guests" in which guests are perceived as having more social and cultural if not economic status. This in itself can be problematic, especially since hospitality and friendliness can then become part of commercial transactions, leading to misinterpretations and interpersonal conflicts. Also, although the tourism industry oftentimes offers employment opportunities, except for a select few, these jobs tend to be low-paying and low-status in service industries in which workers have little say in their activities and must cater to the needs and whims of upper management and tourists. This can then breed social discontent and attitudes of resentment and distrust on the part of workers and does little to enhance cross-cultural experiences of tourists. Furthermore, jobs in tourism frequently are seasonal, so cannot be relied upon. The industry in general may also draw workers away from more stable, traditional, or socially significant jobs, disrupting traditional networks of exchange and impacting the community as a whole. Similarly, culinary tourism can also be intrusive by bringing outsiders into private and domestic spaces, such as neighborhood markets, home kitchens, and in-group oriented dining establishments.

Simultaneously, culinary tourism can also offer opportunities that would never occur

otherwise or for individuals who traditionally would not be given such possibilities. For example, domestic cooks may be able to now earn money by sharing their skills with tourists, perhaps elevating their own social and economic status. Similarly, tourist sites may change since some culinary tourists are now seeking out farms, markets, and small, family-run restaurants rather than the traditional tourist attractions. This can help to spread tourist dollars more equitably within a host community and allow for more socially sensitive interactions between hosts and guests. This might unfortunately be offset by the industry's emphasis on "unique" and "memorable" dining experiences since they tend to feature high-class foods as well as those that are more exotic and rare, regardless of their actual place within the local food culture.

Culinary tourism can actually be seen as a positive force in some instances in which it brings attention to healthier ingredients and preparation styles and more sustainable production methods. Many tourists now seek out local and organic foods, actually creating a market for foods formerly ignored or supporting farmers who were struggling to compete in the more industrial agriculture-based global food system. Belize provides an example of culinary tourists shifting from the British-based cuisine of tinned and imported foods to locally grown, native fruits and vegetables. This can be interpreted as a positive change towards environmental and economic sustainability in the local food system.

Another social issue connected to tourism in general is its role in cross-cultural communication and understanding. It is hoped that by being exposed to another culture, individuals become more sensitive to that culture, more aware that members of that culture are fellow human beings so that tourism can be a way to understand other cultures and to resolve conflict. Food, in particular is perceived as a way to learn about and bond with another culture. The simplistic assumption is that if people eat one another's food, they will better appreciate each other. Although food can be a window into another group's beliefs, histories, and practices, it is not an automatic bridge between different cultures or even different individuals. Too often, tourists focus on what is either exotic or tasty to them and fail to learn to appreciate the everyday foodways of a group. Also, "breaking bread" together is not always a pleasant or fruitful experience, but requires a deeper understanding of the food cultures of all participants as well as sensitivity to the social patterns connected to meals and food.

Issues: Cultural

The cultural issues surrounding culinary tourism are complex, partly because culture itself is complex, dynamic, and constantly being reconstructed and reproduced according to the interests and resources of individuals but also because so much of culture is intangible and interpretive, dependent on the perspective of the individual. This also means that the cultural impacts of tourism cannot be assessed quantitatively or conclusively. Because food has "material presence," it offers a way to explore many of these issues. It is helpful, though, to think of cultural issues in terms of both the conceptualizations around food and the actual practices of foodways.

Tourism in general tends to exoticize or "other" a group of people, commoditize their culture, and shape their traditions in a variety of ways that then make them more attractive to tourists. As a force of globalization, it can also speed up the processes of modernization and industrialization, homogenize and "sanitize" the host culture, weaken cultural identities, and spread an invented "tourist culture" lacking historical authenticity. At the same time (Gmelch 2010; Chambers 2010), it can also create markets for cultural practices; bring attention, recognition, and affirmation to cultural groups and traditions; and create opportunities for cross-cultural interactions and understanding. One of the issues, then, is whether tourism is qualitatively different from any other exchanges between cultures. Critics point out that the difference in economic, political, and cultural status gives the tourist power to shape the public identity and image of the host culture in any way that suits them

(Heldke 2003; 2005), and it is this imbalance of power that is the problem that means that tourism "colonizes" other cultures. The food cultures of both hosts and guests are then changed because of that colonization.

To "other" a group of people means to set them apart from oneself and to focus on their differences rather than their commonalities. This then allows tourism to treat individuals and cultures as "resources" rather than human. A popular phrase used in tourism marketing and planning is "exotic but safe." Applied to culinary tourism, it means that the food needs to be presented as exotic or strange enough to make people curious but familiar enough that they feel safe trying it. Food then is manipulated to fit those expectations, oftentimes changing it in some way or highlighting a food in a way not usually done within that culture or giving it new meanings.

This leads to issues of authenticity, another problematic concept connoting continuity with a culture's past, core values, or expressive forms. On one hand, culinary tourism often emphasizes foods and foodways experiences thought to be "authentic," that is, historically representative of a locale, but this emphasis can also ignore the dynamic quality of food cultures to change over time. Certain ingredients, recipes, or preparation methods then become canonized as the only accurate representatives of that culture, and the cuisine becomes "crystallized" into that form. Culinary tourism also may encourage "inauthentic" representations of the food culture by paying attention to foods perceived as the most unique, exotic, and interesting, requiring specialized culinary skill, high quality, and memorable. This in turn can create a "tourist cuisine" shaped to meet tourists' expectations.

Culinary tourism also commodifies food and foodways. While food is oftentimes the center of monetary exchange, tourist activities emphasize the value of a food to attract tourist dollars. This then trivializes and "trinketizes" cultural practices and forms, turning them into "playthings" and souvenirs for tourists. Apart from being demeaning to the host culture, this process potentially weakens the emotional and social associations they carry, causing them to shift away from expressing cultural histories, identities, and beliefs. The luau in Hawaii, for example, has become a tourist production with stereotypical foods, shifting from the sacred meanings held within the community to simply a party and feast for the tourists (O'Connor 2009). Such impacts can ultimately weaken cultural identity.

At the same time, commodification, and tourism in general, may affirm those cultural identities and meanings. As outsiders, tourists often notice regional and cultural boundaries as well as distinctive practices. This attention can have positive impacts in defining and strengthening the identities behind those practices and can even shift the place of those identities in public consciousness to a higher status (Long 2010). Tourists may also provide financial and social support that enables participation in local culinary traditions.

This challenges the critique of tourism as homogenizing host cultures, making them all the same in order to please tourists. Some researchers argue, though, that culinary tourism actually discourages homogenization since it features foodways distinctive to specific locales, encouraging hosts to maintain or revive those local traditions (Meethan 2001; Wilk 2006). Culinary tourism can also encourage "glocalization," the adaptation of global products to local forms (Ritzer 1993).

Food being a commodity also changes the relationship between the producer–host and consumer–guest. It is not just a matter of good hospitality to offer food that one's guests will like; it is also good business. Recipes may be changed, ingredients substituted, and new foods invented to attract tourists. Also, festive dishes and meals tend to be featured rather than everyday foods, misrepresenting the food culture as a whole.

Culinary tourism raises questions of intellectual property rights connected to intangible cultural heritage. Can the recipes, preparation methods, or cooking styles of a culture be used by anyone who wants to for profit? Do members of that culture have legal ownership of those traditions, so that only they can claim them as representing their culture? Furthermore, who within a cultural group has the right to define what is a tradition or a characteristic of the culture?

Similar questions can be asked of entire cuisines and are being addressed in attempts to protect heritage from modernization and globalization. Geographical indicators are used in many countries to designate the accurate origin of a food product, with France establishing the Appellation d' Origine Controlee in the early 1900s to protect cheeses and wines. This is based on the older concept of terroir (taste of place) and allows regions to claim certain types of produce as belonging to them. An arm of the government also sets standards by which any produce from a designated region can carry an AOC stamp of approval.

Summary

Culinary tourism has significant impacts on food cultures, food systems, and the economies, environments, societies, and cultures surrounding them. These impacts are potentially beneficial but can simultaneously be harmful, depending on the perspective of the evaluator. It is essential that the complexity of culinary tourism be recognized so that issues can be addressed.

Cross-References

- ► Authenticity in Food
- ► Intellectual Property and Food

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