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Food Miles: How Much Do We Care?

Introduction

On November 18, 2017, a column entitled "Food miles: Don't buy strawberries from Israel during Irish strawberry season" appeared on *TheJournal.ie*, an Irish online-only news publication. The column was written by Michael Kelly, founder of a non-profit organization that helps consumers grow their own food at home. In this column, Kelly exasperatedly laments the fact that local supermarkets are fully stocked with imported produce in place of locally grown food, including strawberries that could easily be grown in Ireland. The problem, Kelly writes, is this:

> It's a great example of a completely needless import that's bad for our planet (all the energy required to get it here), bad for Irish growers and their livelihoods and most likely bad for our wellbeing too (because the food is not as nutritious having travelled all that way) (2017).

Kelly highlights the growing concern over "food miles," a measurement of how far food travels from farm to table. He is a firm supporter of the dominant narrative surrounding food miles—the longer food travels, the worse. Most importantly, more food miles are worse for the environment, because of the massive amount of energy required to transport the food that could otherwise be saved if the food was grown locally instead. Then, even if environmental concerns are not

enough for consumers, food miles advocates claim two main "side effects." More food miles are worse for your mouth, because the food loses its freshness, nutrition, and perhaps its good taste along the way. More food miles are also worse for your local farmers, as purchasing food grown across the world means that you are taking away their business.

However, the benefits of reducing food miles are not as black and white as this dominant narrative might make them seem. While it is mostly true that transporting locally grown food requires less energy than transporting food from other places, there are many circumstances where locally grown food actually produces a higher carbon footprint overall. Consumer preferences, even among those conscious of where and how their food is produced, also do not seem to fall in line with the food miles narrative—some even prefer food grown abroad. In short, the environmental concerns over food miles are somewhat misguided, and consumers often ignore the secondary side effects.

Background

The term "food miles" has only been in our vocabulary for a relatively short period of time. When growing attention over climate change made people more environmentally conscious during the 1990s, some environmental advocates started considering how far their food was travelling. Since then, researchers have developed multiple definitions and formal calculations of food miles, but all of them revolve around the total distance that food travels from the moment it is taken from the land to the moment it is sold in a store (Hill 2008). For most of the food consumed in the developed world, that is, food sold at supermarkets or big box retailers, the journey starts far away from the consumer, possibly even on a different continent. By the time food from this conventional system reaches the plate, it has potentially traveled over a thousand miles. In the United States, most estimates suggest that food travels around 1,500 miles on

average before it is consumed. This transportation requires a lot of energy, which can have dangerous consequences for the environment—the Worldwatch Institute claims that the fossil fuel energy costs of transporting lettuce grown in California to New York are more than thirty times higher than the food energy it provides to the consumer (2012).

Of course, there is a natural solution to the food miles problem. Eating food grown locally would seemingly eliminate most of the energy costs of transportation. Advocates promote the local food movement by claiming that such food is not only more environmentally sustainable, but that it tastes better and is better for you. This is not to mention the appeal of literally handing your dollar to local growers instead of to a hidden complex global food system. However, despite the fact people are generally becoming more environmentally aware, many consumers still pay little attention to food miles.

Environmental Concerns

The logic behind reducing food miles assumes that the energy used in transportation is a significant proportion of the total energy used in the food system. Otherwise, efforts towards lowering energy use might be better directed towards other aspects of production, such as the fertilizer used to grow plants, or the machines used to turn chickens into chicken nuggets. One study calculated that transportation accounted for 14% of all energy use within the American food system, behind both processing (16%), and agricultural production (21%). Perhaps most surprising is that "home refrigeration and preparation" required the largest share, at a whopping 31% (Heller et al. 2000). Perhaps the environment would be better served if consumers downsized their freezers as opposed to buying local. A more recent study found "less than 1% of the greenhouse gas emitted during the production of Danish pork can be ascribed to transport from the slaughterhouse to the Port of Harwich in Great Britain," an even lower estimate

(Dalgaard 2007). That number may seem astonishingly low, but keep in mind that the overall environmental impact of food production is astonishingly high. Food miles may not be as environmentally significant as the dominant narrative would have us believe, but considering the sheer size of the overall food system's carbon footprint, it still makes sense to cut energy use whenever an opportunity arises.

Another critique of food miles is the notion that there is a direct relationship between the distance a food travels and the magnitude of its environmental effects. For example, some advocates might scold a New Yorker for buying coffee from Peru, but pay no mind when he buys apples from Washington. However, a case study of the food imported by an English food retailer determined that "there is little correlation between the distance the produce travels and the resultant emissions" (Coley et al. 2011). Only once the data was separated by mode of transportation could any correlation be seen. Food that traveled almost 15,000 kilometers by sea actually had lower associated carbon dioxide emissions than food that traveled 5,000 kilometers by truck. As the authors noted, parts of the United States actually had a lower "emission factor" than parts of the Eastern Mediterranean, because trucking food across a continent is significantly worse for the environment than shipping food from one continent to another. Thus, it is actually the mode of transport that is the most important determinant of the environmental costs of transportation instead of sheer physical distance.

A third, and more nuanced issue surrounding food miles is the scale of the firms involved in the production process. If more people are buying food from local farmers, those farmers may increasingly rely on transportation and distribution methods that are not as environmentally efficient as the vertically integrated systems of global food corporations. A case study of the rise of the "grow local" movement in the Philadelphia area illustrates this fact. Judy Wicks, owner of

a café in the city, described how once she completed her \restaurant's transition to an entirely local menu, she asked herself how she could bring more business to the local farmers. She went to Glenn Brendle, one of her first patrons, and asked what he needed to help him support that demand. The answer was $30,000 for Brendle to buy his own refrigerated truck (Fettig et al. 2008). In this instance, the introduction of a refrigerated truck into the environment was the direct effect of an increased demand for locally grown food, and the footprint produced by that truck had a direct negative impact on the environment. This is where the issue of scale comes into play—for the small farmer, the marginal costs of increasing his distribution are much greater than those of a corporation in the conventional food system. Wicks's colleague Ann Karlen acknowledges this—"At a certain point, it's just not effective anymore to have individual farmers each driving their own truck in day after day to deliver their food" (Fettig et al. 2008).

The reason why it is so environmentally costly for small local farmers to scale up is that doing so would also be quite financially costly. As Raj Patel writes, "... the bigger a company is, and the more transport and logistics it does, the cheaper it is for that company to be in business" (2007). A small pig and chicken farmer explains his economic situation like so—"the issue just becomes scale. Can you make enough money with five hundred chickens?" (Fettig et al. 2008). Now, this does not mean that reducing food miles will always be a hopeless cause. As with most economic enterprises, there are "sunk costs" associated with initial expansion. Once revenue exceeds those costs, however, perhaps local farmers will be just as efficient as the conventional food system at packaging and delivering food. Then, because the energy costs of transportation are reduced, the environment will be better off. This will take time, however, and the point is that reducing food miles is not like flipping a switch. One restaurant switching its food supply from Sysco to a local farm may not have the environmental impact food miles advocates desire.

The final environmental consideration is that some areas are inherently better suited to growing certain foods than others are. Insisting on growing certain products locally can in some cases be akin to trying to fit a square peg in a round hole. The environmental costs of growing food in an unsuitable climate may more than offset the benefits of avoiding transportation energy costs (Carlsson-Kanyama 1998). As James McWilliams puts it, "Determining to eat locally produced food is generally a good thing ... during certain times of the year in certain regions." This quote was accompanied in a video by scenes of deserts with man-made oases that were clearly depicted to be harmful for the environment (Fettig et al. 2008). Not everything can, nor everything should, be grown within fifty miles of your house. This concern emphasizes a key concept of economics—some regions have a comparative advantage in producing certain goods, which allows countries to specialize in those goods and trade their surplus for goods they cannot produce themselves. While Worldwatch Institute researcher Brian Halweil might claim that "the economic benefits of food trade are a myth," the environmental benefits may not be (2012).

Consumer Preferences

When food mile advocates appeal to consumers to eat locally grown food, they often claim that such food tastes better and is more nutritious than food that has traveled the globe. Some consumers do in fact agree. A survey of 251 customers at a British supermarket asked each participant to explain why they had purchased a given product from their shopping cart. While only 22 indicated they had chosen a product specifically because it was British, the most common explanation for doing so was that "local is tastier" (Kemp et al. 2010). While it is impossible to objectively say whether food grown in one area of the world tastes better than food grown somewhere else, there may be some science behind why local food tastes better. Adam Romero discusses how as citrus production grew in California, it could not be grown at such

increasing scales without pesticides. Reliance on pesticides not only had consequences for the environment, but also for the "freshness" of the product and the health of the consumer (2016). One can easily draw a parallel with the fact that much of the food grown today has become engineered to survive the conventional food system. The preservatives and other chemicals added to food so it can survive both the long journey and many days on the shelf can have a clear negative effect on freshness, nutrition, and almost certainly taste.

Another reason given for buying local is that doing so eliminates most of the middlemen involved in the conventional food system. When shopping at a farmers' market, the person taking your money is almost certainly involved in the production process. On the other hand, the money given to a Wal-Mart cashier is exchanged through many different sets of hands before it eventually trickles down to the farmer, who usually gets only a very small fraction of the original price. For example, a case study of coffee production revealed while a consumer buying off the shelf pays $26.40 per kilogram, the grower in Uganda only earns 14 cents for a kilogram of his beans (Patel 2007). To whom does that massive difference go? Uneasiness over this question was the most popular negative reaction to the concept of food miles, a survey of French consumers revealed. As the authors put it, "Consumers' concern about distance is that it unduly masks the conditions of production and distribution." The spatial distance that food "miles" describes mattered much less than the intellectual distance from knowing the details of the production process (Sirieix et al. 2008). Additionally, the aforementioned survey of British consumers also interviewed British food importers—members of that mysterious global food system. When asked how their business had been affected by the growing discussion over food miles, "none had experienced any decline in sales that they could attribute to the food miles issue

... one interviewee commented that they believed supermarkets were more interested in the food miles debate than consumers were" (Kemp et al. 2007).

Finally, the survey of French consumers actually determined that the positive connotations of distance actually outweighed the negative connotations—"Even consumers who criticized long distance food transport express an overall positive feeling about 'exotic' products" (Sirieix et al. 2008). It must be noted that the products discussed in these focus groups were Himalayan salt and Fiji water, which were specifically chosen because they are nonperishable, to eliminate any argument over freshness or taste. If the imported product tastes the same as the domestic product, consumers may actually prefer the imported product. Both this survey and the survey of British consumers and food importers seem to point to the fact that while some consumers are aware of the food miles debate, and may even show a preference for buying locally, the actual distance a piece of food travels is not a determining factor in choosing which food products to purchase.

Local vs. Organic

The debate over food miles has an important, and perhaps more mainstream, corollary—the organic food movement. As with local food, advocates of organic food claim that the elimination of pesticides helps produce food that both tastes better and is better for the environment. The rise of these two movements begs the question: which one should take priority? Which one do consumers follow? Michael Shulman offers his answer—"I do not believe that unless we localize our production, we can possibly achieve a sustainable food system ... if you have to choose between [local or organic], I would choose local" (Fettig et al. 2008). However, once again, consumers have their own interpretation. The aforementioned

French study also interviewed people who primarily consume locally grown organic food. If given a choice between local *or* organic, many of the respondents chose organic:

> "When we stressed the fact that many of organic imports to France are from southern hemisphere countries, implying long distance transport and bad environmental effects, they answered that supporting producers from poor countries is more important than preserving the environment ... Even for consumers who are supposed to be more environmentally oriented than other consumers, food miles do not really matter" (Siriex et al. 2008).

This sentiment is quite shocking, especially considering Patel's findings that those producers from poor countries are not earning much, if any, profits from their products. It appears that consumers still have a lot to learn.

Conclusion

It is unfortunate that most of the consumer surveys undertaken over food miles are around a decade old. Perhaps more recent studies might reflect a shift in consumer understanding of how conventional food is produced and the environmental effects of eating such food over food that is locally grown. However, the research that does exist shows that consumers do not particularly care one way or another about food miles, despite the appeals by those who claim that reducing food miles is inherently good for the environment—a claim which is not entirely true either. Sure, in the long run, locally produced food is probably the more sustainable option. The only issue is that getting there might not be easy and straightforward as the dominant narrative might make it seem.

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