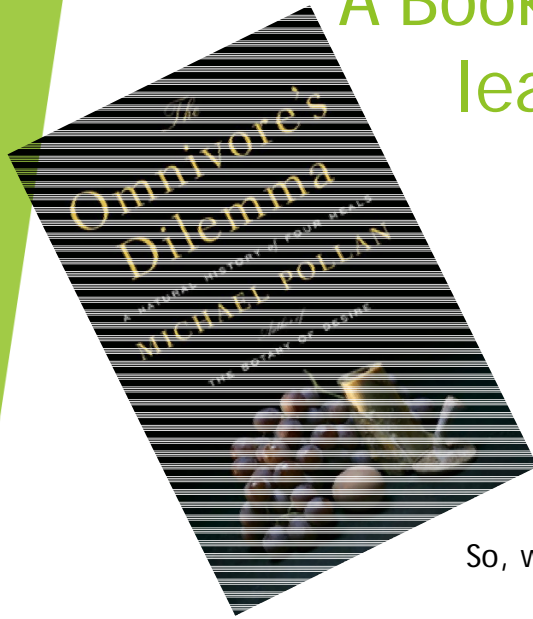


A Book Report in (at least) Four Parts



Peter Ampim, Cat Barr, Guadalupe
Castro & Lucas Gregory
AALP Cohort V

So, what shall we have for dinner?

Over-Arching Themes

- ▶ Logic of Nature vs. Logic of Human Industry
 - ▶ Lack of a 'steadying food culture' in the US
 - ▶ Evolving science and 'science'
 - ▶ Exaggerated focus on appearance and health
 - ▶ Susceptibility to marketing
- ▶ Eating as an Agricultural Act
 - ▶ Our most profound engagement with the natural world
 - ▶ Industrial eating blocks the relationship
 - ▶ 'Nature never grows a monoculture ...'
 - ▶ Agricultural, AND Ecological, AND Political Act

So, what shall we have for dinner?

The food chains that sustain us

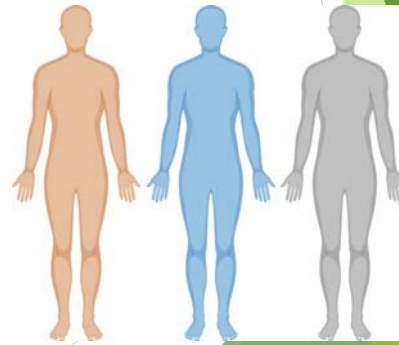
- ▶ The industrial
 - ▶ One word: CORN
 - ▶ Monoculture to support the entire meal, everywhere
- ▶ The pastoral
 - ▶ Industrial organic
 - ▶ Monocultures transported/collected at points of sale - anything, anytime, anywhere
 - ▶ Organic
 - ▶ Grass-fed animals, varied vegetables supporting seasonal locovores
- ▶ The personal
 - ▶ Hunting & gathering - doing it all for yourself

So, what shall we have for dinner?

Industrial Corn

Corn: The Plant Conquest

- ▶ Corn (Zea Mays) is nearly in everything!

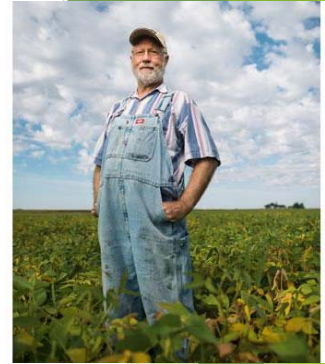


- ▶ When Europeans and Native Americans first meet, Europeans discovered that a single kernel of corn would return far more kernels than wheat. Since then, Americans have been planting more and more corn
- ▶ Zea mays is especially easy to cross pollinate to create hybrid crops.
- ▶ A hybrid was discovered that produced a superior yield in the first generation (or F-1) and an inferior yield in the second, creating the biological equivalent of a patent. Corn was now ready for corporate attention.



The Farm

- ▶ It costs a dollar more to produce corn than it does to sell it.
 - ▶ Farmers are able to produce twice as much corn as past generations but are struggling to make ends meet.
- ▶ Crops that once relied on solar energy now rely on fossil fuels.
 - ▶ Fossil fuels are needed to create synthetic nitrogen used in the soil
- ▶ George Naylor's "Naylor Curve"
 - ▶ increase in the production of corn drives down the price of corn. This benefits corporations like Cargill and Coca-Cola as well as consumers who need corn to feed their livestock or their families. The only way farmers can pay their bills is to produce more corn, which in turn drives down the price.
- ▶ The industrial food chain has led to a perversion of the nitrogen cycle, agriculture, and perhaps the diet of America.



The Elevator

- ▶ Once one of Naylor bushels of corn reached the elevator it could no longer be followed. It was indistinguishable from all the other bushels from other farmers before it was shipped out.
- ▶ Up until the 1850 corn was stored in and shipped in bags that contained the farmer's address.
- ▶ The Chicago Board of Trade instituted a grading system in 1856, which allows buyers to ignore who produces the corn and which also invites farmers to ignore any objective in growing corn except yield.
 - ▶ Pollen notes that factory farming, obesity in America, and the prevalence of food poisoning are all indirect consequences of this system.
- ▶ Three fifths of America's corn ends up on the factory farm, where cattle are fattened for slaughter.



The Feed Lot

- ▶ Garden City, Kansas, an industrial feedlot.
 - ▶ The feedlot has produced more problems than solutions.
- ▶ Cattle has evolved to eat grass-Benefits grass and grassland habitats
- ▶ Feedlot largely eliminates grass to a preference of corn-Fattens cattle faster but creates problems
 - ▶ Manure too high in phosphorus and nitrogen to use as fertilizer
 - ▶ Concentrated animal feeding operation has produced medical problems which is solved by antibiotics but creates drug resistant bacteria.
- ▶ "Corn-fed feedlot steer represents the ultimate triumph of industrial thinking over the logic of evolution."

The Processing Plant

- ▶ Corn that is not sent to the feedlot ends up in the processing plant
- ▶ Mills: Traditional mill-grinds corn into flour to produce tortillas
 - Wet Mills-breaks corn down into its molecular parts
- ▶ Processed Food: Benefits-Less food spoils, better access to food
 - ▶ Big company's process food for profit rather than nutrition



The Consumer

- ▶ Early nineteenth century farmers responded to surplus of corn by making cheap whiskey.
 - ▶ Created an epidemic of alcoholism
- ▶ Now three of every five Americans are overweight and one in three have a chance of developing diabetes
- ▶ With the drop in the price of corn processed food becomes cheap and plentiful.
 - ▶ Invention of high fructose corn syrup creates a cheaper sugar alternative
- ▶ With cheaper alternatives company's such as McDonalds began the Super Size movement to gain more profit.
 - ▶ Obesity and diabetes have become more prevalent because energy-dense foods like a Big Mac are now the cheapest on the market
- ▶ Government is still subsidizing the cheap corn that guarantees that "the cheapest calories in the supermarket will continue to be the unhealthiest."

The Meal



Industrial 'Big' Organic

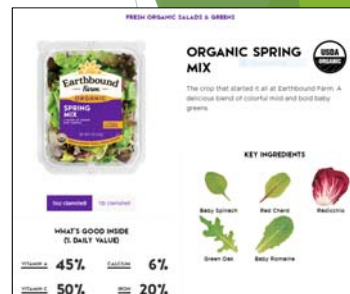
Multiple Monocultures coming to a Grocery Store Near You

Industrial Organic - Monocultures, United

Petaluma Poultry



Earthbound Farms Spring Mix salad greens



Cal-Organics Vegetables and Fruits



Stonyfield Dairy Products



Industrial Organic - Grimmway Farms



1960's Grimm brothers' roadside stand



Year-round vegetable production, packaging, & distribution; all US production by 2019

Cost of so much bounty ...

Coachella & Imperial Valley, California

Our southern-most growing region, the Coachella and Imperial valleys are nestled in the desert just east of Los Angeles and extending southward to the US-Mexico border. Due to its mild winter temperatures, this area produces bountiful winter vegetables with a season that typically lasts from September to May.

Elevation
Almost entirely below sea level

Growing Season
Winter



Live Oak, Florida

Located near the Georgia-Florida state line, our ranches in Live Oak are situated in a prominent agricultural area in the Florida panhandle. This region's soil is rich with nutrients and sandy in texture providing us with excellent growing conditions for our fresh carrot crops.

Elevation

100'

Growing Season
Winter



Columbia Basin, Washington

Our northwestern growing region sits along the winding Snake, Columbia and Yakima rivers in Eastern Washington. Known as the Columbia Basin, this region provides us with exceptional land ideal for growing baby carrots and its mild summer weather allows us to harvest from mid-summer through mid-fall.

Elevation
550'

Growing Seasons
Summer & Fall



e.g: Grimmway Farms vegetable growers

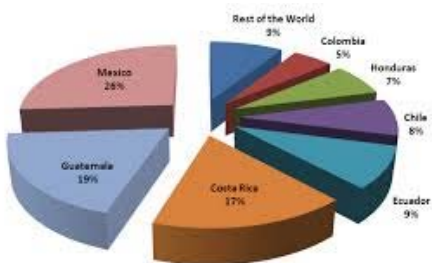
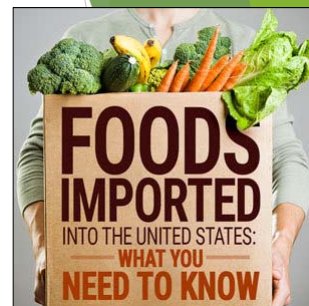
Growing:
20%

Distribution routes & fuel costs

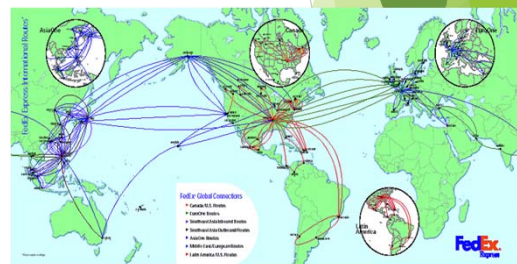


Moving:
80 %

Distribution routes & fuel costs



Moving:
80 %




So many choices ...



The Industrial Organic Meal \$34/3 people

- ▶ Roast chicken (Rosie) - Petaluma Poultry
- ▶ Roasted veggies: yellow potatoes, purple kale, & red winter squash - Cal Organics
- ▶ Steamed asparagus (Jan [South America]; \$6/lb, taste like damp cardboard)
- ▶ Spring mix - Earthbound Farms
- ▶ Organic ice cream - Stonyfield Farm
- ▶ Organic black berries (Mexico)

FRESH ORGANIC SALADS & GREENS



ORGANIC SPRING MIX

The mix that started it all at Earthbound Farms, a delicious blend of colorful root and leafy greens.

KEY INGREDIENTS

- Baby Spinach
- Red Chard
- Romaine
- Swiss Chard
- Baby Kale

WHAT'S GOOD INSIDE (5 BAY VALUE)

Organic Spring Mix	45%
Organic Spring Mix	6%
Organic Spring Mix	50%
Organic Spring Mix	20%



Stonyfield ORGANIC OBSESSIVELY ORGANIC PRODUCTS RECIPES FIND A STORE

FROZEN YOGURTS

- FROZEN YOGURT BARS GOTTA HAVE VANILLA
- FROZEN YOGURT BARS GOTTA HAVE VANILLA DARK CHOCOLATE
- FROZEN YOGURT BARS GOTTA HAVE VANILLA FUDGE SWIRL
- FROZEN YOGURT BARS GOTTA HAVE VANILLA
- FROZEN YOGURT CREME Caramel
- FROZEN YOGURT AFTER DARK CHOCOLATE



The Polyface Farm

An Example of a Typical Non-Industrialized Organic Operation (Artisanal Production) and Illustration of the Pastoral Food Chain

Polyface Farm - A Typical Pastoral Organic Operation



William and Lucille Salatin



Joel Salatin - A Grass Farmer

Christian libertarian environmentalist capitalistic lunatic farmer. Others call him **High Priest of the Pasture**, **Bio-terrorist**, **Typhoid Mary**, **Charlatan**, **Starvation Advocate**

Polyface Farm Products

From 100 of 550 acres

Product	Quantity
Beef (Salad Bar)	25, 000 lbs
Pork (Pigaerator)	50, 000 lbs
Broilers (Pastured)	12, 000 lbs
Eggs	30, 000 dozens
Turkeys (Pastured)	800
Rabbits (Forage based)	500



Relationship marketing

Why the Old Pastoral Idea? - William and Joel Salatin



William

- ▶ Struggling conventional farmers
- ▶ Observation from land acquired
- ▶ André Voisin

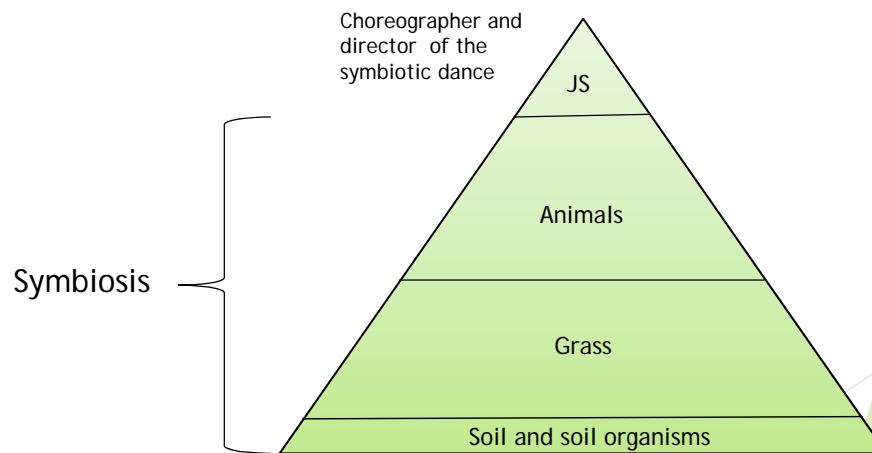


Joel


- ▶ Building on Dad's legacy
- ▶ Nature's model over factory model



Nature's Model at Polyface Farm - *The Symbiotic Orchestra*




The Alternative Farm



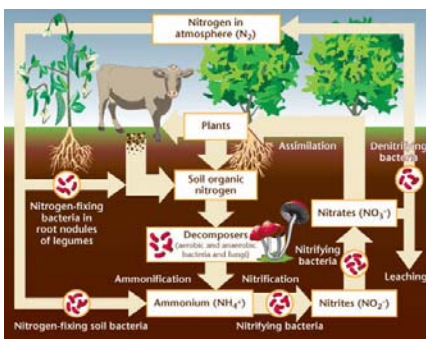
A simple and relatively short food chain

No chemical use is a measure of a well functioning system and efficiency

Local food economy



Major Truck Routes on the MFJ (2016)



Nitrogen Cycle

Nitrogen in atmosphere (N_2)

Plants

Assimilation

Denitrifying bacteria

Soil organic nitrogen

Nitrates (NO_3^-)

Leaching

Decomposers (bacteria and fungi)

Nitrifying bacteria

Nitrates (NO_3^-)

Ammonification

Nitrification

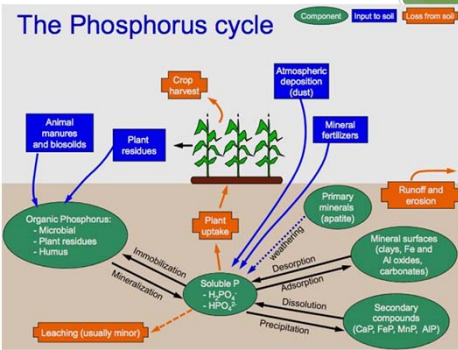
Nitrites (NO_2^-)

Ammonium (NH_4^+)

Nitrifying bacteria

Nitrogen-fixing soil bacteria

Nitrogen-fixing bacteria in root nodules of legumes



The Phosphorus cycle

Components: Input to soil, Loss from soil

Animal manures and biosolids

Plant residues

Mineral fertilizers

Atmospheric deposition (dust)

Runoff and erosion

Plant uptake

Primary minerals (apatite)

Mineral surfaces (clays, Fe and Al oxides, carbonates)

Secondary compounds (CaP, FeP, MnP, AlP)

Soluble P ($H_2PO_4^-$, HPO_4^{2-})

Desorption

Adsorption

Dissolution

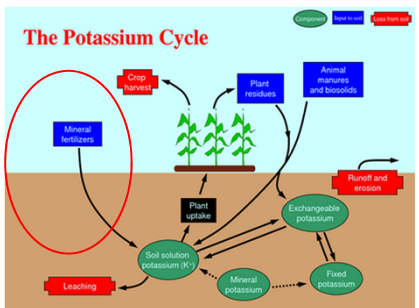
Precipitation

Immobilization

Mineralization

Leaching (usually minor)

Organic Phosphorus: Microbial, Plant residues, Humus



The Potassium Cycle

Components: Input to soil, Loss from soil

Mineral fertilizers

Crop harvest

Plant residues

Animal manures and biosolids

Runoff and erosion

Plant uptake

Exchangable potassium

Soil solution potassium (K^+)

Leaching

Mineral potassium

Fixed potassium

Substituting the NPK Mentality

"animals do the real work around here"



Beef Cattle

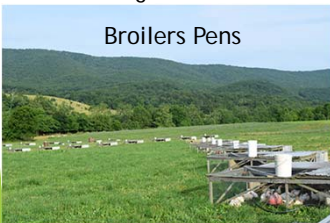
harvesting/manure crew



Gobbledygo



Composting facilitators



Broilers Pens

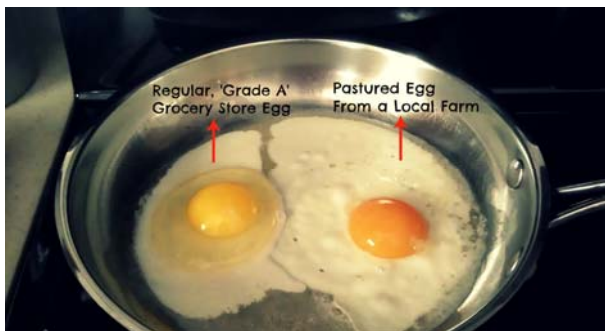
Egg mobile
ecological services crew



Raken (Rabbit-Chicken House)

"You Pay for What You Get"?

\$0.79 a dozen vs. \$2.20



Folic acid
Vitamin E
Beta carotene
Less fat
Omega 3s (CLA and ALA)

\$ 2.05/lb vs. \$1.29/lb

"Chickeny chicken"



"Eating is both an agricultural and political act"

Challenges?

"A successful local food economy implies not only a new kind of producer, but a new kind of eater as well who regards finding, preparing, and preserving food as one of the pleasures of life rather than a chore"

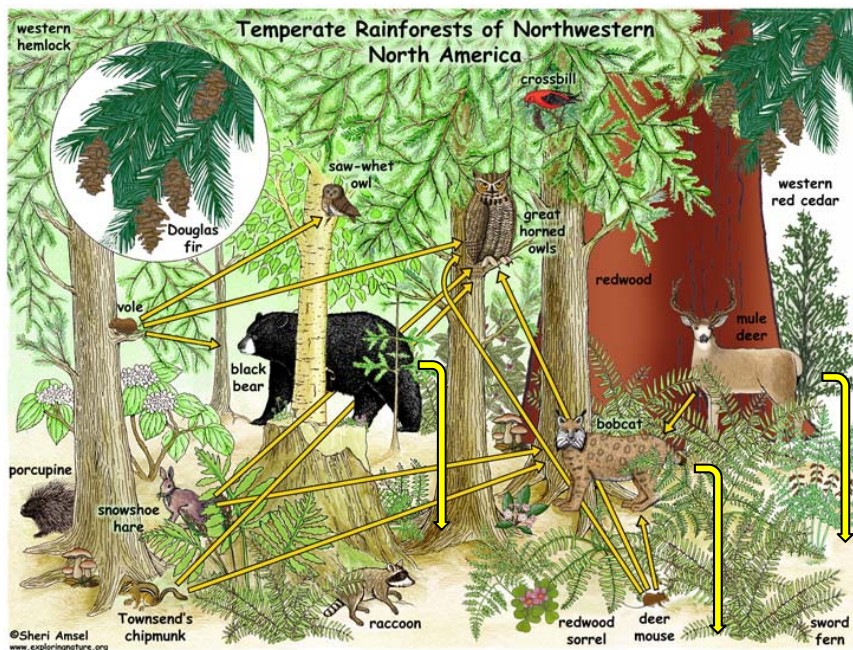


Personal: The Forest

Get it all Yourself!

The Cohort Dilemma

- ▶ How many omnivores?
- ▶ How many vegetarians or vegans?
- ▶ How many foragers?
- ▶ How many hunters?



6 C's OF THE FOREST

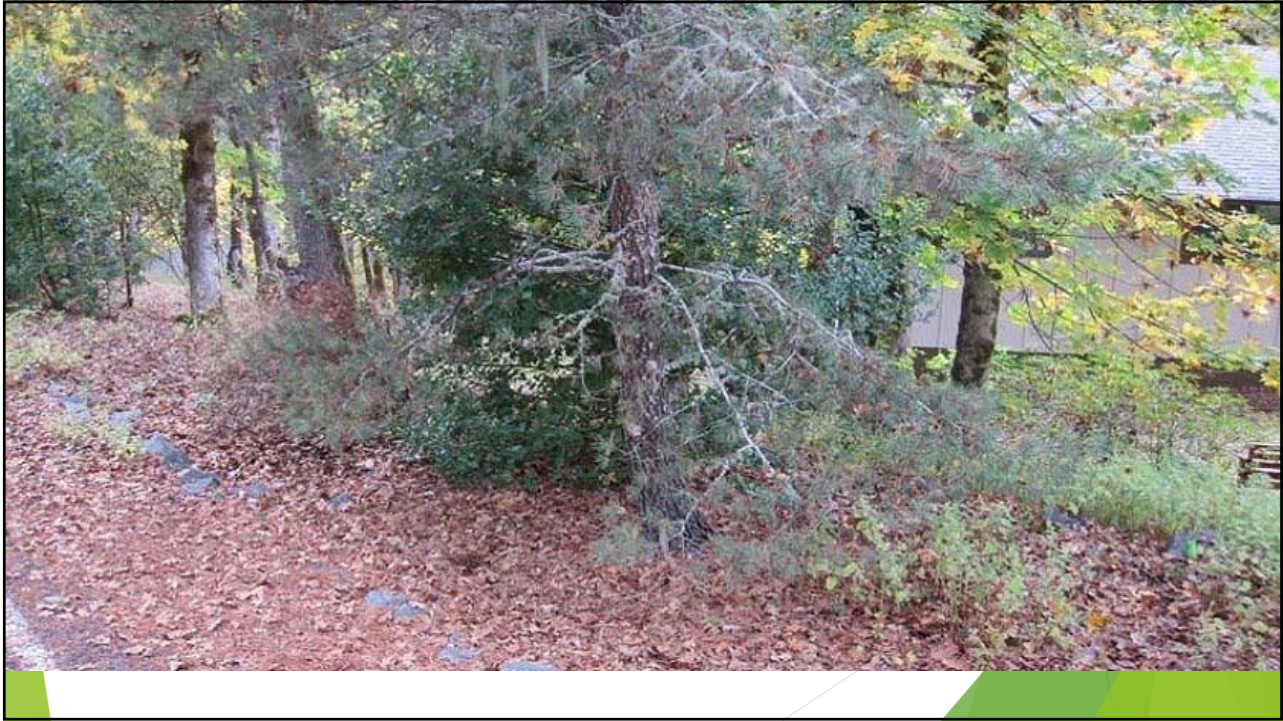
- ▶ Choice
 - ▶ We can eat almost anything
- ▶ Consciousness
 - ▶ Awareness of true food source
 - ▶ Cannabinoid?
- ▶ Cognition
 - ▶ Ability to reason and morals
- ▶ Capacity
 - ▶ Skills and ability to get food anywhere
- ▶ Concern
 - ▶ Stewardship of the resource; personal preservation
- ▶ Cost
 - ▶ Time, effort, resources

My dog understands several human words.
I don't understand any dog barks.
He may be smarter than me...



Lets Play: Dine or Die!









Yummy or Dummy!



Yummy or Dummy!



Yummy or Dummy!



Yummy or Dummy!



Yummy or Dummy!



Yummy or Dummy!



Full Awareness of Meal's Production

- ▶ Taking a meal from hunted and gathered ingredients all the way to the table gives you a great appreciation of what it actually takes to put that meal on the table
 - ▶ Time
 - ▶ Effort
 - ▶ Costs
 - ▶ Personal connection
 - ▶ Responsibility
 - ▶ Pride



Deconstructing Dinner*

*NY Times Book Review, David Kamp, April 23, 2006

Can You Really Save the Planet at the Dinner Table?***

*** An economist's critique of The Omnivore's Dilemma

Tyler Cowan, Nov 01, 2006

Reviews agree ... and disagree

- ▶ Satisfying detail
- ▶ National eating disorder
- ▶ Crazy pervasiveness of corn in the typical American diet

- ▶ Economist argues the value of the time consumed in the Personal meal far outweighs the costs of any of the other options
- ▶ People are more likely to want to purchase a car with better fuel economy than to give up access to grapes flown in from Chile at great fuel expense
- ▶ 'Fuzzy nostalgia for the preindustrial past'

We Omnivores: When You Can Eat *Anything*

- ▶ How do YOU choose?
 - ▶ Time crunch
 - ▶ Multi-event juggling
 - ▶ *Enjoying* the meal!??
- ▶ Did this reading assignment change the way you look at deciding?
- ▶ As Texans, where do we fall?
 - ▶ Big corn > big cows > big steaks
- ▶ As humans attempting to be healthy?
 - ▶ More veggies, but *all* local or seasonal?? Isn't HEB good enough?
- ▶ As educators, assisting others in making 'good' decisions?
 - ▶ Health? What diet does that mean *today*?
 - ▶ Science and responsibility - messaging in Urban Agriculture

So, what shall we have for dinner?