The LELO Tax for Farmed and Wild Animals

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Animal Liberation, 1975-2025 and Beyond

Introduction

Outline

This project is about finding the morally optimal incentive-aligning tax for all animal products

That is, the right tax to align individual's economic interests with society's moral interests

1. The LELO Principle
2. The LELO Tax
3. This Project

The LELO Principle: A Theory of Morality

The LELO Principle

The LELO Principle (Live Every Life Once). The state of affairs that is best for the world at large is the state of affairs that you would most prefer to live if you were to, not only live your own life, but to *live every life once*.

The LELO Principle: Two Person Example

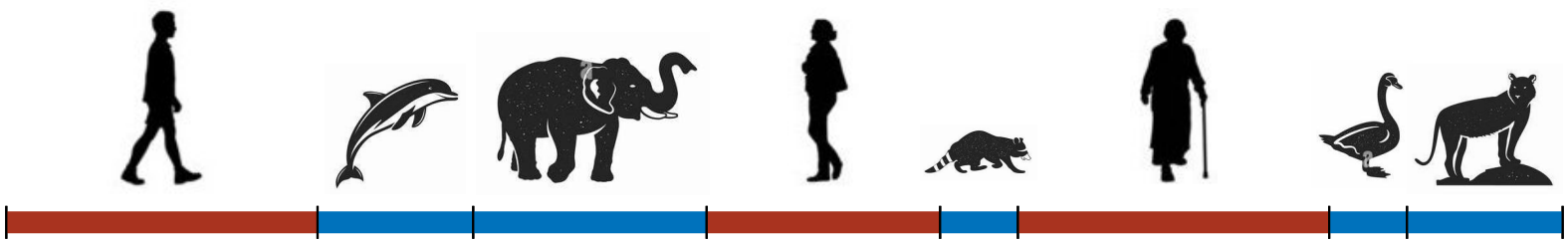
Suppose there are just two people: you and Alice.

The action that is morally best is the action that you would selfishly take if you were to, not only live your own life, but to live your life *and* Alice's life, one after the other.

The LELO Principle: The Total Life

LELO says that it is not just *your* life that matters morally. It is precisely *all* lives that matter morally.

It is the **total life** that matters.



Reference

The LELO principle is a principle I propose in a paper called "XU" (which stands for *experienced utility*) (Fryxell, 2024)

The LELO Principle and Animal Welfare

In order to respect LELO, you must act as if it is the case that:

> *If you decide to bring an animal into existence, you must also live that animal's life.*

For example,

- Suppose you are deciding whether to A) do nothing or B) raise a chicken, slaughter it, and eat it.
- LELO requires that you act as if you had to live every life once.
- If you choose A), you would live your life without eating chicken and nothing else
- If you choose B), you would live your life with eating chicken and then you would also live the life of the chicken itself
- Hence, the "price" of raising and eating a chicken is that *you have to live its life*.

The LELO Tax: The Optimal Incentive-Aligning Tax

Counterfactual Impact

Suppose you buy one whole chicken from the grocery store

Are you counterfactually responsible for its life?

- *No, that chicken had already been raised and slaughtered.*

Are you counterfactually responsible for some other chickens' lives?

- *Yes, increasing the demand for chicken increases the equilibrium quantity supplied of chicken.*

Are you counterfactually responsible for exactly one other chicken's life?

- *No, increasing the demand for chicken by one increases the equilibrium quantity supplied of chicken by less than one.*

Counterfactual Impact

In particular, increasing your demand for chicken by one increases the equilibrium quantity supplied of chicken by $\rho \in [0, 1]$

For the economists in the room, the expression for ρ is

$$\rho = \frac{\varepsilon_S}{\varepsilon_S - \varepsilon_D},$$

where ε_S is the price elasticity of supply and ε_D is the price elasticity of demand

For example, ρ was estimated to be .76 for broiler chickens in Norwood and Lusk (2011)

Moral Decision Making with LELO

Suppose you wanted to make a moral decision about whether you should purchase the chicken in the grocery store

By purchasing it, you would cause .76 additional broiler chickens to be raised and slaughtered

To respect LELO, you should add "experiencing 3/4 of the life of a factory farmed chicken" to the "price" of the chicken, and decide based on that price

In other words, if you *buy* a chicken you have to live 3/4 of its life

Moral Decision Making with a LELO Tax

Alternatively, you could ask yourself:

> *What's my maximum willingness to pay to avoid experiencing the life of a factory farmed chicken?*

Call this value $\text{WTP}_{\text{chicken}}$

To respect LELO, you should add $3/4 \times \text{WTP}_{\text{chicken}}$ to the price of the chicken, and make your purchasing decision based on that price—this is equivalent to the previous thought experiment by construction

This is the optimal LELO tax that an altruistic decision maker should impose on herself:

$$\text{Optimal Self-Imposed Tax}_{\text{animal}} = \rho_{\text{animal}} \times \text{WTP}_{\text{animal}}$$

Moral Governing with a LELO Tax

Suppose you are the government and can decide how much to tax chicken. Should you tax chicken at $3/4 \times \text{WTP}_{\text{chicken}}$?

Perhaps surprisingly, it turns out the answer is *no*

It turns out that the optimal tax, if imposed on *everyone* (as opposed to a single altruistic decision maker), does not include ρ

$$\text{Optimal Universal Tax}_{\text{animal}} = \text{WTP}_{\text{animal}}$$

$$\text{Optimal Self-Imposed Tax}_{\text{animal}} = \rho_{\text{animal}} \times \text{WTP}_{\text{animal}}$$

Reference

I develop this theory in general (not just for animals) in a paper called, "Beyond Pigou: The LELO Tax" (Fryxell, 2025)

For the economists in the room:

- I didn't quite define the LELO tax fully here
- how does the LELO tax relate to the Pigouvian tax?
- the LELO tax is the optimal incentive-aligning tax in general
- the Pigouvian tax is a special case of the LELO tax when one dollar = one util

This Project

This Project: The LELO Tax for Farmed and Wild Animals

In this project, Carter Allen and I

1. apply the theory of LELO taxation to animal products (some of which we just saw)
   - we won't have time to discuss it today, but note that the theory is a bit different for *wild* animals
2. estimate $\text{WTP}_{\text{animal}}$ for all of the most common farmed and wild animal products

This will give us

1. the **optimal self-imposed tax** for each animal product
   - the tax an altruistic decision maker should impose on each animal product as a heuristic for making moral decisions
2. the **optimal universal tax** for each animal product
   - the tax a benevolent government should impose on each animal product in order to give each individual the correct moral incentives

Final Output of this Project

Product	Animal	ρ	LELO Experience	WTP to Avoid Life	LELO Tax
chicken sandwich	broiler chicken	.76	???	x	x
7" cheese pizza	dairy cow	.56	???	x	x
one egg	laying hen	.91	???	x	x

Chicken Sandwich Calculation

$$\frac{115 \text{ ounces of edible meat}}{1 \text{ Chick-fil-A sandwich}} \times \frac{1 \text{ chicken}}{1000 \text{ grams of edible meat}} \times \frac{45 \text{ days of life}}{1 \text{ chicken}}$$

$$= \frac{5.175 \text{ days of broiler chicken's life}}{1 \text{ Chick-fil-A sandwich}}$$

Final Output of this Project

Product	Animal	ρ	LELO Experience	WTP to Avoid Life	LELO Tax
chicken sandwich	broiler chicken	.76	$.76 \times 5$ days $= 4$ days	x	x
7" cheese pizza	dairy cow	.56	???	x	x
one egg	laying hen	.91	???	x	x

7" Cheese Pizza Calculation

$$\frac{85 \text{ grams of moz cheese}}{7'' \text{ personal pizza}} \times \frac{700 \text{ grams of milk}}{85 \text{ grams of moz cheese}} \times \frac{1 \text{ kg of milk}}{1{,}000 \text{ grams of milk}}$$

$$\times \frac{1 \text{ dairy cow}}{43{,}000 \text{ kg of milk}} \times \frac{6 \text{ years of life}}{1 \text{ dairy cow}} \times \frac{365 \text{ days}}{1 \text{ year}}$$

$$\times \frac{20 \text{ waking hours}}{1 \text{ day}} \times \frac{60 \text{ min}}{1 \text{ hour}}$$

$$= \frac{42.8 \text{ minutes of dairy cow's life}}{7'' \text{ personal pizza}}$$

Final Output of this Project

Product	Animal	ρ	LELO Experience	WTP to Avoid Life	LELO Tax
chicken sandwich	broiler chicken	.76	$.76 \times 5$ days $= 4$ days	x	x
7" cheese pizza	dairy cow	.56	$.56 \times 45$ min $= 25$ min	x	x
one egg	laying hen	.91	???	x	x

Egg Calculation

$$\frac{1 \text{ laying hen}}{600 \text{ eggs}} \times \frac{2 \text{ years of life}}{1 \text{ laying hen}} \times \frac{365 \text{ days}}{1 \text{ year}}$$

$$= \frac{1.22 \text{ days of laying hen's life}}{1 \text{ egg}}$$

Final Output of this Project

Product	Animal	ρ	LELO Experience	WTP to Avoid Life	LELO Tax
chicken sandwich	broiler chicken	.76	$.76 \times 5$ days $= 4$ days	x	x
7" cheese pizza	dairy cow	.56	$.56 \times 45$ min $= 25$ min	x	x
one egg	laying hen	.91	$.91 \times 1.2$ days $= 1$ day	x	x

Estimating WTP_{animal}

We would like to estimate WTP_{animal} across a wide range of people

Of course, asking people their WTP to avoid a chicken's life in a factory farm comes with incredible uncertainty—these people don't know what it's like to be a chicken.. nobody does

LELO says this is the right question if you perfectly understand the experience of being a chicken

In my view, these estimates will be quite rough as compared to the "fully informed answer", but they will be informative nonetheless, and likely constitute somewhat of a lower bound on the truth

Estimating WTP_{animal}: The General Public

We will compose three-paragraph vignettes of each animal's life from birth to slaughter

We will do this for broiler chickens, laying hens, pigs, beef cattle, dairy cows, farmed salmon, wild salmon, and maybe others

In a large-scale survey of the general public, we will ask each participant to read one pre-selected vignette. After this, we will ask them their WTP to avoid experiencing that life

Vignettes

We view these three-paragraph vignettes of each animal's life from birth to slaughter as extremely important

Both for the estimation of $\text{WTP}_{\text{animal}}$

And because we find having short but accurate vignettes of every animal's life extremely informative in their own right—and we want to invest heavily in getting them right

Here's an example of one:

Factory Farmed Chicken Vignette

Early Life (Weeks 1–2)
A broiler chicken begins life in a windowless shed housing 20,000 to 40,000 birds, with each bird occupying a space smaller than an A4 sheet of paper. This shed will be illuminated with artificial light 23 hours a day, leading most chickens to become chronically sleep-deprived. After hatching, the chick is placed directly onto litter covering the concrete floor—typically wood shavings that will not be fully cleaned until after slaughter. The air carries the sharp smell of ammonia from accumulated droppings, which can damage the chickens' eyes and respiratory systems. Unlike their wild ancestors who would forage selectively and rest under maternal protection, these chicks have immediate and continuous access to high-calorie feed designed to maximize rapid weight gain. In the shed, they cannot engage in many natural behaviors young chicks would have performed in the wild, such as dust bathing or exploring.

Growth Period (Weeks 3–5)
During this intensive growth phase, the chicken experiences dramatic physical changes as its weight increases from less than a pound to over 4 pounds, compared to wild chickens that weigh only 2 pounds as adults. The crowded conditions become much more intense as birds grow larger. The constant dim lighting and lack of windows mean the bird never experiences natural day-night cycles or sees sunlight. As their bodies rapidly outgrow their skeletal structure, many birds develop painful leg problems and spend increasing time lying down, unable to support their genetically-enhanced body weight. Their litter becomes increasingly saturated with waste, creating burning sensations on the birds' feet and legs.

Final Weeks and Slaughter (Weeks 6–7)
In the final stage of life, the bird weighs nearly seven times more than its wild counterpart would at maturity, reaching about 6.5 pounds at just 47 days old—approximately 13% of a natural chicken lifespan, which can extend 6-10 years. In contrast, organic chickens commonly grow at half the rate of chickens on intensive farms and live for at least 70 days before slaughter. The bird's cardiovascular and respiratory systems strain under the unnaturally rapid growth, with many dying of heart failure before reaching slaughter weight. Before transport to slaughter, broilers are usually deprived of food for several hours, then caught and loaded into transport crates; around 0.3% of them will die from crowding and stress during transport. At slaughter, birds are shackled by their feet and electrically stunned before their throats are cut.

Factory Farmed Chicken Vignette: Excerpt

It is week 7 of your life. You now weigh 7x times more than a full-grown wild chicken. You grew from 0.08 to 6.5 pounds (an 80x increase) in just 47 days. On the way to slaughter, you are caught and loaded into a transport crate; around 0.3% of your peers will die from crowding and stress during transport. At slaughter, you are shackled by your feet and electrically stunned before your throat is cut. Your life has lasted 7 weeks, just 0.16% of a natural chicken's lifespan (6-10 years).

Vignettes (Help Us!)

It's very important to me that we get these vignettes right. We want to put a lot of effort into this.

We want to do this for broiler chickens, laying hens, pigs, beef cattle, dairy cows, farmed salmon, wild salmon, and maybe others

If you think you can help with this, for any of these animals, or you know someone who would be a good resource, **please reach out to me in person at the conference or by email (on my website)**

Estimating WTP_{animal}: Animal Scientists (Help Us!)

We would like to conduct a similar survey for *animal scientists* in particular

We aren't completely sure yet what population of researchers would make the most sense for this second survey (what even is an "animal scientist"?) or where to find them

If you have any thoughts, please reach out to me in person at the conference or by email (on my website)

Qualitative Interviews with CAFO Employees and Small Farmers

Lastly, we hope to conduct qualitative interviews with CAFO employees and small farmers

These interviews may inform our vignettes

And we will also ask them about their WTP to avoid living the lives of the animals they work with *as they understand them* (rather than going off the vignette we write)

Conclusion

Conclusion

The LELO tax is the correct incentive-aligning tax under the LELO principle

That is, it aligns the individuals' economic interests with society's moral interests

$$\text{Optimal Universal Tax}_{\text{animal}} = \text{WTP}_{\text{animal}}$$

$$\text{Optimal Self-Imposed Tax}_{\text{animal}} = \rho_{\text{animal}} \times \text{WTP}_{\text{animal}}$$

We want to estimate the optimal universal and self-imposed taxes for all animal products

Conclusion

Product	Animal	ρ	LELO Experience	WTP to Avoid Life	LELO Tax
chicken sandwich	broiler chicken	.76	$.76 \times 5$ days $= 4$ days	x	x
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Thank you for listening!

Questions, comments, or concerns?