Q1 Answer 1: When they own it

v.0.0.2

1 Cases

1.1 Golden camper

Golden camper: Indigo has an uncanny sensitivity to features of terrain which are strongly correlated with gold being present beneath the surface. She doesn't know this. But something about the nearby rocks, plant life, and other features always make her feel comfortable and happier. Thus when she's out backpacking, she frequently camps in these places. Goldmember Inc has been flying drones over the area and notices her camping in spots they've already identified as gold deposits. At first they freak out, thinking that she's beat them to the gold. But then they realize that she's not digging anything up. Eventually someone suggests that they try digging for gold in other places they've seen her camp. They find gold there too. They thus repurpose their surveying drone to discretely follow her on her trip. They carefully map where she camps, where she takes rest breaks, et cetera.

1.2 Wheelbarrow

Wheelbarrow: We land on an uncharted, uninhabited island. Nothing on the island belongs to anyone. Brown cuts down a tree and builds a wheelbarrow out of the wood. Brown sells the wheelbarrow to Green.

1.3 Hoolie

Hoolie: Hoolie is a big-data company. They amass data from its users and other sources. They do some very sophisticated math to find previously detected correlations in consumer behavior. From these correlations, they create detailed consumer profiles which it can sell to marketers/advertisers. One product, Taco-targeting aids owners of taco stands in finding people most likely to be

influenced by ads and coupons at particular times. For example, customers who like red vines, whiskey, and own cats are much more likely to purchase tacos on Thursdays. If you own a taco stand, these are the customers in your area that you want to be sure you reach on Thursdays.

2 Intro

When you go to the grocery store, the store tracks what you buy. The degree to which you are individually identifiable depends on several factors, including whether you paid by credit card and whether you signed up for their loyalty program. But what's important for now is that they collect the data about you at the point-of-sale through their normal business operations. At that point, they own the data.

If you own something, you have a right to use it in certain ways. If some of those ways are profitable, it seems that you have a right to keep the profits. Thus our first potential answer to Q1 is:

(Q1A1) A company may profit from personal data which they own.

To understand whether this is a good answer, we need to start by thinking about the concept of ownership. That is, we need to think about property.

3 Ownership and rights to profit

If you own a car, you may sell it and keep the profits. If you own an apartment and rent it out, you get to keep the profits because. How does ownership fit with the right to profit? Let's start with some fairly obvious observations.

3.1 Necessary condition

One possibility is that ownership is a necessary condition.

(O-N) S may profit from the sale or use of x only if S owns x

This is false. Ownership is not a necessary condition of legitimate profiting. Suppose you rent an apartment and your lease allows you to sublet it. If you rent out your apartment while you are on vacation and make more money than your rent, ceteris paribus, you have a right to keep the profit.

That said, the 'ceteris paribus' (all things being equal) clause is doing a lot of work in this example. If your lease prohibits subleasing or it is illegal to do so, your legal right to keep the profit is undermined. Still, since you would have the right to the profit in some cases, (O-N) cannot be true.

3.2 Sufficient condition

Perhaps ownership is instead a sufficient condition

(O-S) If S owns x, S may profit from the sale or use of x

That's getting better. Though, clearly, this will need to be supplemented with legal and moral qualifiers on the kinds of use. Gun owners have no right to profit by killing people. That said, it does give us basically what we need.

4 Property / ownership

But what exactly do we mean by 'ownership'? The answer cannot be separated from philosophical justifications for property.

4.1 Property as a bundle of rights

Bundle of rights

Whenever we talk about property, we're talking about a bundle of rights. If you own a car, you get to determine who touches it, who uses it and how. You can destroy it. You can sell it.

Obviously, these rights are not absolute. They exist only within a larger system of rights and obligations. The right to exclusive use of your car doesn't mean that you can use it in any way you please. You must drive it on the correct side of the road. You cannot destroy it with explosives in the middle of a parking lot. You can't sell it to a child.

Importantly for what's to come, property rights are transferable. You can sell, donate, or gift your car to someone else. Such property transfers are, generally speaking, complete.

Once the car you sold me is mine, I now have all the rights you did —exclusive use, et cetera. You no longer have any rights to it.[1]

That brings us to the question of how you get property. There are 2 possibilities: you were either the first owner or not.

4.2 Transfers

If you weren't the first owner, you get the property through a legitimate transfer. Someone sells or gives it to you. As long as they got it by a legitimate transfer and so on back to the original owner, it's yours.[2] We can summarize:

> (T) If S1 acquires x from S2 through a legitimate transfer and S2 either created x or acquired it through a legitimate transfer, then S1 owns x

But what about the first owner? For that, we'll turn to two flavors of a Lockean account. You can either make it out of something or make it out of nothing.

4.3 Locke

On Locke's account, broadly speaking, you can create property by taking an unowned resource and mixing your labor with it. That somehow makes it yours and gives you the exclusive right to control it.

Thus suppose we land on an uninhabited island which no one owns. I walk over to an orange tree, reach up and grab and orange. Because I've mixed my labor with it, it's now mine. In Wheelbarrow, Brown owns the wheelbarrow because she mixed her labor with the wood. Thus she may sell it to Green.

4.3.1 Account of property

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1. This is, of course, a broad generalization. It is possible to put riders and other provisions into a sale contract —you could retain a right to drive it once a month. This might be something to keep in mind for later

2. Note that if at some point the property was stolen, none of the subsequent owners legitimately own it. It doesn't matter if the theft occurred yesterday or generations ago. Recognizing this opens the door to one line of argument for reparations to African Americans for slavery.

We can summarize Locke's account of creating property rights:

> (L) If r is an unowned resource and x is the result of S mixing her labor with r, then S owns x [3]

Assuming that we have some sort of system of market exchange we also accept something like

> (L2) If A owns x, ceteris paribus, A has a right to profit from the sale or use of x.

Again, we'll assume that prohibitions on harm to others, immoral uses, and other restrictions are built in to the 'ceteris paribus'.

4.3.2 Right of use

Why does it matter that the resource labored upon is 'unowned'? Suppose I lend you my wheelbarrow to use. After you are done using it, you clean it up and paint some cool flames on it before returning it to me. You have mixed your labor with the wheelbarrow. But since you don't own it, you do not thereby acquire any property right to it. You cannot demand payment for the artwork. Indeed, if I don't like the flames, I can demand you restore it to it's previous un-enflamed state.

At the same time, if I have granted you the right to use my wheelbarrow in your between-bar-transportation business, I do not automatically acquire a right to your profits. That is, it is not true that:

> X (L3) If A owns x, A has a right to the profits from any use of x which A permits

Obviously, that could be part of the rental agreement. But the right to profit does not follow automatically from ownership. If it was automatic, the tool and equipment rental business would be awesome. You would have a right to the profits your customers make from whatever they use your equipment to build.

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3. For simplicity, this leaves out the famous proviso: that this is true as long as S does not exhaust the supply of x.

4.3.3 Application to Q1

There's a clear difference between Wheelbarrow and Hoolie. The wheelbarrow is built out of a resource that no-one owned. That seems to raise a crucial question: Who owns personal data about S from which valuable insight V is extracted?

On first glance, it depends. Suppose the supermarket doesn't keep any record which ties you to the purchase you made. They know some customer bought all that beer. But they have no way of knowing it was you. That data is unquestionably their property. It may seem that this is very different from inputting your weight into a fitness tracking app. That data is always about you.

But I don't think any difference, if there is one, matters. Virtually any company whose lawyers have a pulse will have a privacy policy, terms and conditions, or other binding policy by which you license the company to do as they please with the information. Just like the person who borrows the wheelbarrow to run their bar transportation business, the company has the sole right to the profit.

4.4 Kirzner

Kirzner's account offers something different. Applying his view, the ownership of the data is (morally) irrelevant. The company owns the profits from the valuable insights because the insights are created out of nothing.

4.4.1 Kirzner's view

To see how Kirzner's view works, consider

> *Pizza arbitrage:* Scarlet notices that Green is selling pizza for $1 on the north side of campus and Blue is selling pizza for $5 on the south side of campus. Being a smart business student, Scarlet buys a bunch of pizza for $1 and sets up shop on the south side of campus, selling it for $4.

What gives Scarlet a right to the $3 profit?

Approaching this in the Lockean way, it's probably because Scarlet owns the money which she used to acquire the pizza. She bought the pizza which gaver her the right to sell it for whatever her customers were willing to pay. That's a bit uncomfortable for the Lockean. The main intuition behind Locke's view is that property is connected to labor and effort. The fact that you worked on something gives you the right to it.

But in Pizza arbitrage, Scarlet didn't do much. She walked from one end of campus to the other carrying stuff. Plenty of people do that for free. She labored at taking people's money and handing them slices. But can those movements justify ownership of the vast wealth she amasses?[4]

On Kirzner's approach, the labor is irrelevant. What Scarlet did was create value (viz., $3) by recognizing the market opportunity. So, just like the person on the island chopping down a tree to make a wheelbarrow, she created something and therefore has a right to profit from it. But unlike Locke who focuses on the labor part of this, Kirzner makes the property right depend on creation.

Kirzner calls his view 'Finders keepers'. I find this strange. Shouldn't it be 'Makers keepers'? Though since he is focused on entrepreneurs, it makes more sense in that the entrepreneur finds the value by finding the market opportunity.

> ''In order to introduce plausibility to the notion of finders–keepers, it appears necessary to adopt the view that, until a resource has been discovered, it has not, in the sense relevant to the rights of access and common use, existed at all'' (Kirzner 1978: 17).

Importantly, the person selling the pizza for $1 can't complain that she got ripped off. When she sold the pizza it was worth exactly $1. The arbitrageur created the extra $3 of value. As Sax says:

> "the entrepreneur has created –ex nihilo– the new use for oranges and has therefore created the additional value of $3....the additional value...was not, in any relevant sense, present in the oranges before...intervention." [Sax 28]

and

> "the discovery of a hitherto *unknown market use* for an already-owned resource or commodity constitutes the discovery of a hitherto *un-owned* element associated with that resource or commodity." [Sax, 28]

Thus Kirzner's basic claims are:

(K1) If S discovers a novel marketable use u for R with value v, S creates v

and

4. Fine. Think about the real example of a stock trader.

(K2) If S creates x ex nihilo, S owns x

Which we can summarize:

(K) If S discovers a novel marketable use u for R with value v, S owns v

That doesn't seem quite right. Dreaming up the marketable use isn't enough. You have to actually exploit the niche. Suppose you and I have the same idea. I sit on my butt. You work your butt off bringing it to life. I have no right to your profits. That said, I don't want to spend more time fixing this picture up. We're going to blow it up shortly.

4.4.2 Application to Q1

Sax's strategy in the paper is to come up with the best case he can for big-data companies having a right to profit from the insights they generate and then turn around and attack that case.

He thus brings in Kirzner's account to explain the right to profit. From that perspective, the profitable insights about consumer behavior aren't sitting there in the dataset waiting to be discovered . They aren't like iron waiting in the ground to be dug up and sold. They are created. That's what gives the big data company the right to profit.

To make this concrete, in the Hoolie case, the marketable insight —the taco-Thursday proneness of cat-owning whiskey-drinking red vine lovers—doesn't exist until Hoolie runs its analytics on the dataset. That process finds something valuable in the dataset. Since Hoolie did the finding, they own the valuable insight. Therefore they may profit from it.

5 Problems for Q1 A1

Now that we have a couple of answers to Q1 in terms of ownership on the table, let's turn to some problems. Spoiler alert: I wouldn't get too attached to these answers.

5.1 Divisibility Problem(s)

Notice that we haven't said much about personal data in particular. Everything we've said would apply a company which uses analytics on weather data to make highly targeted predictions for farmers, airlines, event-planners, et cetera.

The finders-keepers picture turns on creation of value. There has always been liquid in oranges. The valuable beverage orange juice appeared when someone recognized a market opportunity for it. Similarly, according to Sax,

> As long as the big data entrepreneur gets a hold of the original (personal) data in a just way, the entrepreneur is free to apply entrepreneurial insights and appropriate the additional value that she creates. Indeed, justice even requires that the entrepreneur is the legitimate owner of these new insights that are extracted/generated from the original data by the entrepreneur. Just like the original holder of the oranges was never the owner of the property of the oranges that allowed the entrepreneur to make orange juice out of the oranges, so the data subjects, whose data are used, were never the owners of those valuable insights that lie hidden in the data and that the big data entrepreneurs manage to extract. The data subjects providing the data cannot, in providing the data, be explicitly aware of the specific valuable insights that are hidden in their data. To see why, remember that these insights are in fact new non-trivial data, created out of the original data. The very nature of big data analysis is such that the newly mined insights do not follow directly from the original data, meaning that the original data subjects cannot, by definition, be aware of what emergent data can be extracted/generated from their personal data prior to the actual extraction via data mining. Due to this lack of explicit knowledge of all the unpredictable new insights that can be extracted from their personal data, the original data subjects can, under the 'finders, keepers' ethic, not be seen as the legitimate owners of these newly mined insights. The big data companies are the finders-creators of these new insights and their appropriation of the fruits of these new insights is therefore legitimate when the 'finders, keepers' ethic is accepted. [Sax 29]

and

> As I have argued, the 'finders, keepers' ethic depends on the idea that within the same goods, some of the properties can be owned by the original holder, while other properties, namely those allowing for applications the original holder is not explicitly aware of, are unheld at the very same time and can thus, after discovery, be appropriated by the finder-creator. This introduces a certain kind of divisibility to goods which is necessary for finders-keepers to function adequately. {Sax:2016bq} 29

I confess I don't entirely understand what Sax means by 'a certain kind of divisibility'. But I think we can get roughly his worry going by noting that, since we are basing the

right to profit in ownership, people better be separable from their data. The closer any theory claims to saying people can be owned, the more aggressively we should reject it.

5.1.1 Technical problems

The first set of concerns about divisibility involve the technical ability to anonymize data. This doesn't require grand metaphysical claims like the ones we'll get to in a minute. Just the idea that, if we could completely sever the connection between a person and her data (for some uses), there would be no special concerns about personal data.

Oftentimes, the company doesn't need to be able to identify the people the data represents. If I just want to sell advertisers on a way of identifying whom to advertise to, I just need to find correlations between traits of people. I don't care who those people are. If I can replace everyone's name with, say, a unique identifier and then throw away the names, it seems like there's no difference between the personal data and a bunch of weather data.

Unfortunately, it is very hard to anonymize datasets. This is an active research problem for computer scientists. It matters a lot for, say, medical researchers to have a bunch of publicly available patient data. But those patients better never, ever be identifiable.

The problem is that for a variety of theoretical and mathematical reasons, it doesn't take too many data points to identify an individual. As long as there are clever computer scientists around, it is really hard to completely anonymize a dataset.

5.1.2 Metaphysical problems

Of course, no one has proven that datasets cannot be irreversibly anonymized. This is in fact a major ongoing research project. If it turns out that someone invents a way that irreversibly anonymizes personal data, then the problems raised so far will no longer apply. Thus Sax draws on work by Floridi to give the problems of divisibility metaphysical teeth; computer science won't save you here.

Floridi's view is quite provocative. We can summarize it as claiming that you are literally your data.

> Looking at the nature of a person as being constituted by that person's information allows one to understand the right to informational privacy as a right to personal immunity from unknown, undesired or unintentional changes in one's own identity as an informational entity, either actively – collecting,

> storing, reproducing, manipulating etc. one's information amounts now to stages in cloning and breeding someone's personal identity – or passively – as breaching one's informational privacy may now consist in forcing someone to acquire unwanted data, thus altering her or his nature as an informational entity without consent.[5] [195]

[ToDo: Do more to explain and make seem less crazy]

[ToDo: Add summary of the solution to personal identity problems he thinks justify this]

5.2 Conception of justice presupposed

Sax also claims that if the business models of big data companies are justified on Lockean or Kirznerean grounds, then they are vulnerable due to the nature of the conception of justice they presuppose.

Both accounts suggest that the only questions we can ask about the legitimacy of ownership are historical: Did you legitimately create the thing or obtain it through legitimate transfers? If the latter, were all the transfers back to the beginning legitimate? If the answer is 'yes', then there's nothing else to say. That's really significant. These accounts of justice rule out (or make very tricky) questions about the externalities of ownership (e.g., does your ownership negatively impact others) and distributional questions (e.g., how much wealth should any one person control).

One reason this may matter is that the privacy costs and benefits related to big data may need to be assessed cumulatively. It may be difficult to see the problems (and benefits) if we look only at individuals and the transfers between them. We need to look at what those mean overall. If one company has your information and uses it to target marketing to you, that may be relatively unproblematic. But if every area of your life is subject to different companies gathering information on you, that looks potentially more problematic. However, it seems, Sax claims, that these problems cannot be assessed on the Locke/Kirzner accounts of property.

The proper account of justice is a long-running debate in political philosophy. For our

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5. Floridi, L. (2005). The Ontological Interpretation of Informational Privacy. Ethics and Information Technology, 7(4), 185–200. http://doi.org/10.1007/s10676-006-0001-7

purposes, we'll just note that the account is built on foundations which are, at best, still under construction.