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Moral Accounting

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Accounting, Behavior & Organizations
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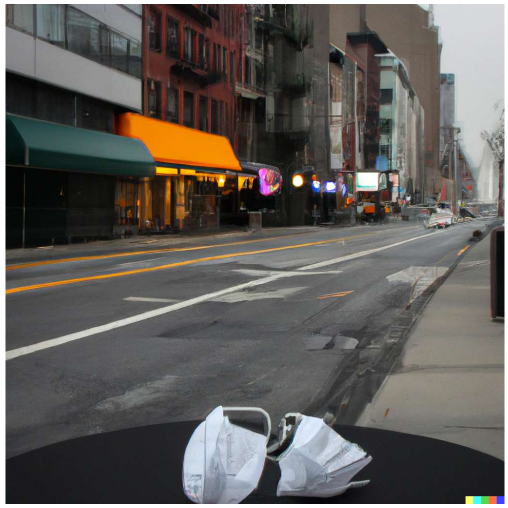
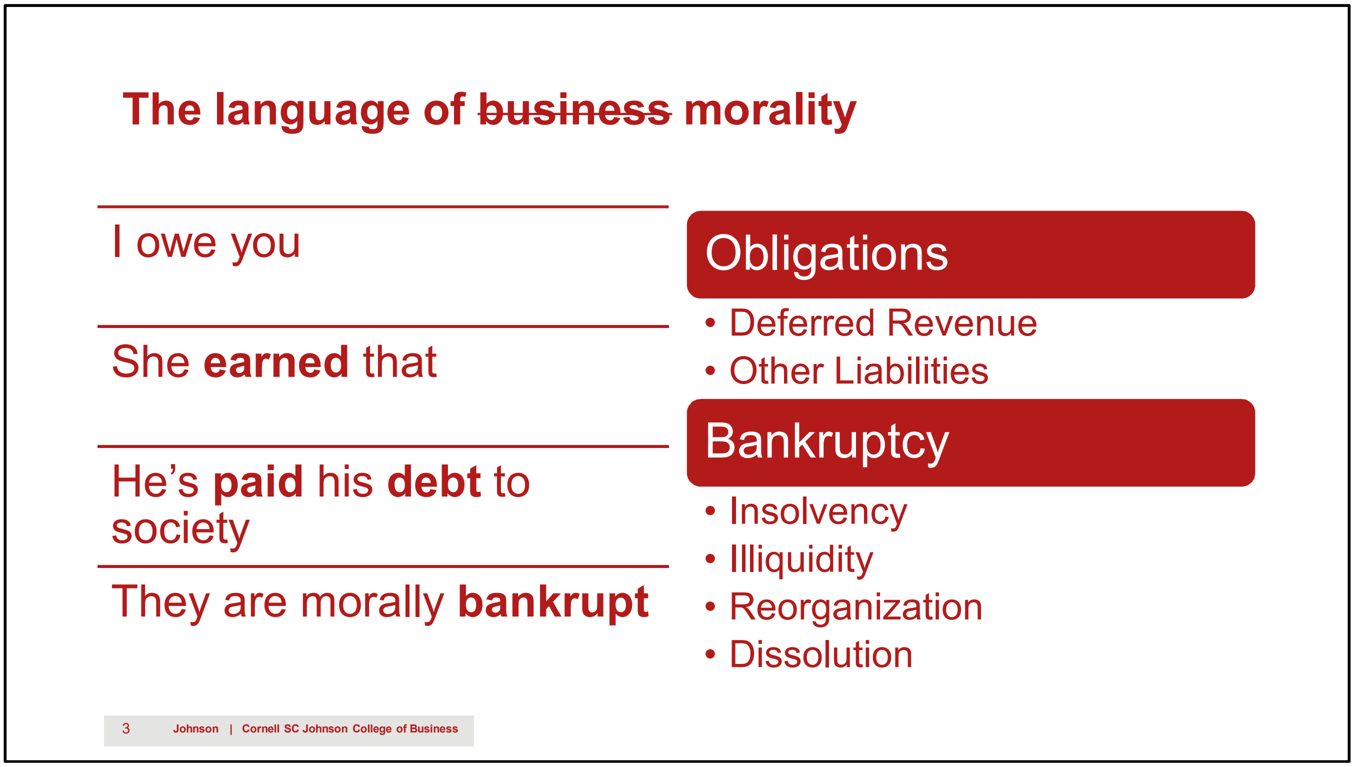
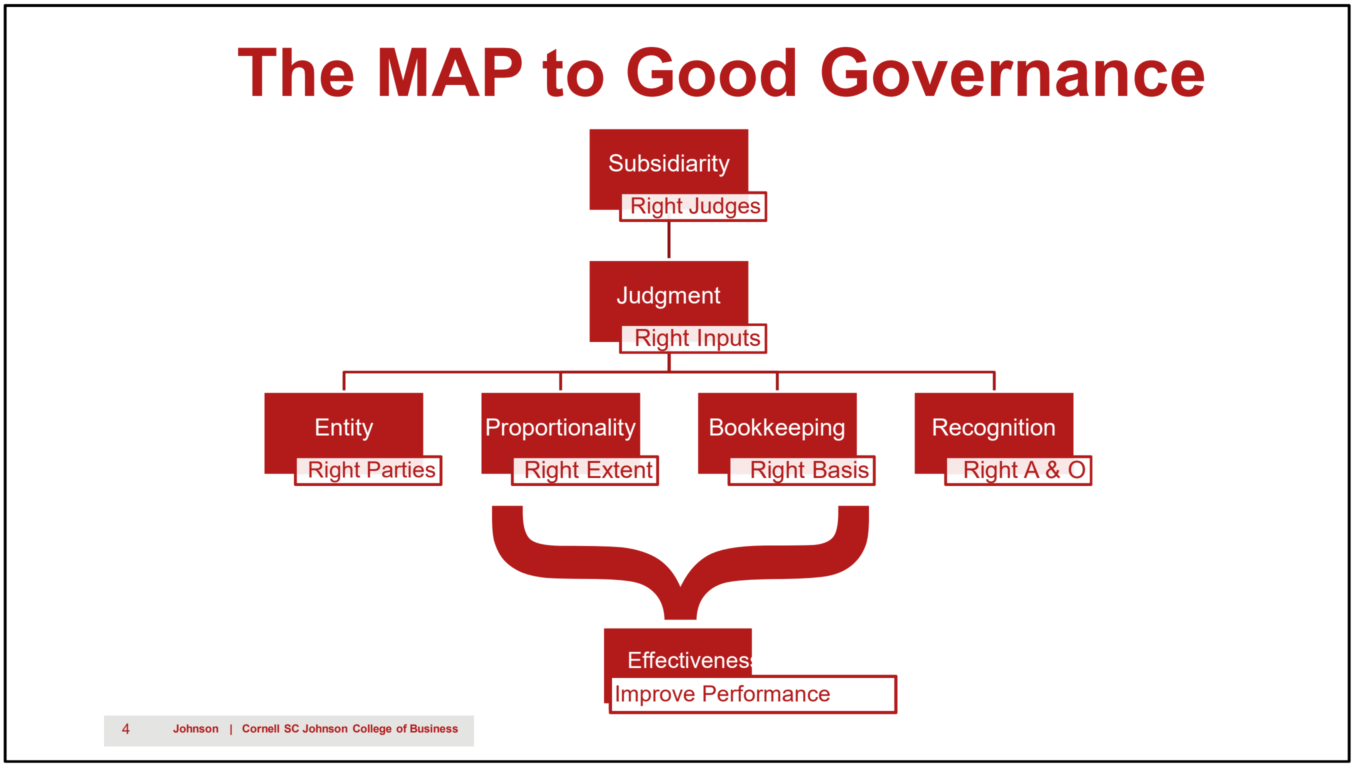


When the world shut down in March of 2020, my wife went to Pittsburgh to help care for our grandkids, and I was alone for three months. It turns out isolation prompts people to rethink things in some pretty fundamental ways. Normal people took a new look at their work-life balance, and we had the so-called great resignation. But I took a new look at something else: what is accounting?



I started by asking: Why is it that when ordinary people talk about morality, they sound like accountants? They say "I owe you" and "she earned that", and "he's paid his debt to society". They even call people "morally bankrupt". The Linguist George Lakoff pointed this out 30 years ago, but as far as I know, no accountant has ever followed up on it. What if we used our expertise to distinguish deferred revenue from other obligations? What if we split moral bankruptcy into insolvency, illiquidity, reorganization and dissolution? Would it help accountants address a wider range of social issues? Would it help us understand morality better?

That led me to discover what I call 'moral accounting'. I say *discover* as an allusion to the old question: *is mathematics discovered or invented?* I can't answer that, but I promise you I have invented very little in moral accounting. It's been sitting right in front of us for a long time, just hidden by the clutter of detail that is so much of modern accounting practice. I've polished it up, and made moral accounting central to how I teach managerial accounting to my Executive MBAs, and even have a few research studies underway, mostly with Tamara Lambert and Marietta Peytcheva, who have also been tremendously helpful in thinking through the more difficult issues.



Moral accounting is a big topic, so my goal today is a modest one: I just want to convey what it is, and inspire you to incorporate some of into your teaching and research.

First, I'm going introduce you to the heart of moral accounting, the MAP, a set of seven Moral Accounting Principles that good accounting systems live up to, and remain the same whether we're using those systems to improve business performance, social performance, or moral performance. Working from the bottom up, they demand that the system: be effective in improving performance, by holding the right parties accountable, to the right extent, on the basis of balanced books, which recognize the right assets and obligations, reflects good judgment, and leaves governance in the hands of those best able to live up to the first six principles.

With that in the back of your mind, let's take a brief historical tour that will take us from the origins of accounting to the future of what accounting can be.

Babylon

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The first evidence of accounting comes from Denise Schmandt-Besserat, the Indiana Jones of Accounting, found these tokens on the left from Ancient Babylon. They were receipts for paying taxes. Tokens could get lost, stolen or counterfeited, so the Babylonians started keeping a copy of each token in the treasury vault, storing them in clay balls that would be marked to indicate the household name. Those markings turned into Cuneiform, the first writing system, and that led to receipts and contracts for all sorts of commercial activity.

Definition of Accounting

Accounting is the field dedicated to designing, operating, and improving accounting systems.

Accounting systems improve stewardship through improved governance that (1) holds stewards to account well, (2) on the basis of a good account of their performance.

This development captures most of what I see as the definition of accounting.

We design, operate and improve *systems,* and use those system to govern stewards, by creating a good account of their performance. You can think of this ancient system of tokens as a form of tax accounting, and that's a business matter and a social matter, but in Babylon, the King was viewed as their God, so it's a moral matter too. So we could look at good stewardship a matter of good business performance, or good social performance, or good moral performance. It doesn't much change how we would evaluate the system: it still needs to rely on a good account of performance.

Our history of Babylon is mostly silent on one part of the definition of accounting: how well does the system hold stewards to account. For that we have to wait another couple thousand years for the Code of Hammurabi.

Code of Hammurabi

42. If any one take over a field to till it, and obtain no harvest therefrom, it must be proved that he did no work on the field, and **he must deliver grain**, just as his neighbor raised, to the owner of the field.

196. If a man put out the eye of another man, **his eye shall be put out**.

229 If a builder build a house for some one, and does not construct it properly, and the house which he built fall in and kill its owner, then **that builder shall be put to death.**

230. If it kill the son of the owner **the son of that builder shall be put to death.**

The Code of Hammurabi is a list of 248 rules for how people will be held to account for their performance. Many of them deal with stewardship, where one person trusts another with assets, and the steward promises them to use them in agriculture, or just keep them safe, and return whatever is agreed upon. It spells out what happens if you don't have witnesses to the contract, or don't have the contract itself, or if the steward falls short of their duties. Sometimes contracts are nullified, sometimes the steward has to pay up, sometimes they get thrown in the water, and sometimes they're executed. Implicit in all of these rules is the principle of Effectiveness: these punishments are effective in improving stewardship.

More explicit is the principle of Proportionality. The Code of Hammurabi is most famous for rule 196: If a man put out the eye of another man, his eye shall be put out—an eye for an eye. And there are many variations of this. There's also a bone for a bone, and tooth for a tooth, and if a man makes a shoddy building and it collapses and kills the buyer, the builder is put to death. But if it kills the buyer's son, the builder's son is put to death.

OK, now this is getting weird. What we have here is a conflict between two principles, which happens all the time. We want proportionality, but we also have to think about the Entity Principle: we want the right parties to be held to account, and at least to my modern eye, a man and his children are different entities.

Frankpledge & Teamwork

But it's hard to hold the right parties accountable. Let's jump ahead to medieval Europe, which used a governance system called Frankpledge. Households would form groups of 10, called tithes, and if one member of a tithe committed a crime or failed to pay a debt, anyone else in the tithe could be held to account for it. Before you sound too shocked, we see this all the time in modern business and even our own classrooms: we have people form teams, and hold everyone to account for team performance. Why do we do this? Again, let's go back to the MAP, and look at the last principle, Subsidiarity: leave governance in the hands of those who can best live up to the other six principles. There were no police forces in medieval Europe, and we're not in a good position to police student teams. So we let them govern themselves.

Assyria & The Beneficiaries of Stewardship

I let the leaders of the conquered cities be flayed, and clad the city walls with their skins.

- Assyrian king Ashurnasirpal II (883–859 BC)

Next on our journey, here's a somewhat gruesome story from Assyria, about 900 BC. The Assyrians created a huge empire, stretching from Egypt to Iran, and were quite Effective in reducing rebellion. How? They didn't just torture people, they bragged about it. They would carve, in large letters, boasts like "I let the leaders of the conquered cities be flayed, and clad the city walls with their skins.— Assyrian king Ashurnasirpal II (883–859 BC)." And they'd leave graphic illustrations for those who couldn't read.

You're eating lunch, so I'll just analyze the accounting here, and focus specifically on who we take as the beneficiary of stewardship. Imagine you're advising the King as his accountant. City leaders are stewards. They have the power to direct their populace, and their beneficiary, as far as we're concerned, is the King. Well, the first principle of the MAP is Effectiveness, and according to history, advertising how severely bad stewards were punished was quite effective in getting them to use their power in the King's interest. Now sure, they care about things like proportionality too, but only in the service of effectiveness.

The Friedman Doctrine

- **Other than staying within the law, the only social responsibility of a business is to earn profits for its owners**

Sadly, this is pretty much what traditional accounting looks like today. We take investors to be the sole beneficiary of stewardship inside the firm. Again, we do care about proportionality, but only in the service of Effectiveness. If we don't punish employees enough, they behave badly. If we punish too much, they will leave. And that's true for all of the other principles as well—we view them as serving only Effectiveness.

Penalty Frames

Bonus Frame	**80 base 20 bonus for hitting target**
Penalty Frame	**100 base minus 20 for missing target**
Either Way	**100 for hitting target, 80 for missing target**

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And even more sadly, we academics take a similar view. Almost 30 years ago, Joan Luft published an experiment, in JAE of all places, where she paid people 100 points for hitting a target and 80 for missing it. But some were told they'd get 80 and a bonus for hitting it, while others were told they'd get 100 but be penalized 20 for missing it. People worked harder in the penalty frame, but they hated it. Hundreds of papers have cited this result, but I went through all of their abstracts on Google Scholar, and not a single one addressed the question: Isn't it wrong to exploit workers' emotional response to penalties just to get them to work harder?

Key Point of Social & Moral Accounting

If the governed are members of society, they are beneficiaries too

So governance must treat them well, even if that doesn't improve Effectiveness.

So here's the big point of this story: There isn't much difference between business, social, and moral performance. We can use the same principles for all of them. But it makes a big difference whether we view our client as some small part of society, like a firm's investors, or all of society. Because if our client is society as a whole, well, the governed are also part of society, and they need to benefit as well. So in social accounting, proportionality doesn't just serve effectiveness—it's an end in itself, because that's how we treat the governed well: by holding the right people to account, to the right extent, on the basis of a good account. My hope is that moral accounting makes it easier for us to expand our repertoire, and incorporate the obligations of governance to the governed into our teaching, research, and practice.

I also want to point out that when we treat society as the beneficiary of stewardship, accounting has the hallmarks of a moral theory.

If society is our beneficiary, we aren't being purely selfish. And we have obligations to society that exist even if no one has the will and power to enforce it—that's the definition of a moral obligation. The principles of the MAP allow us to reason through what is best for society, based on platitudes—statements that no one disagrees with. No one is saying "if only we held the wrong people accountable the world would be a better place." But if we use those principles to improve governance, which in turn makes everyone a better steward on behalf of society, we do make the world a more moral place.

Double-Entry Bookkeeping

Balance Sheet	
Assets	Liabilities Restrictions
	General Obligations

Now let's jump ahead to the Renaissance, when Fra Luca Pacioli codified double-entry bookkeeping. Rather than talk about the history, I'll just walk you through a bit of moral bookkeeping. A steward is a mission-driven entity, like a University, so the assets are balanced by three types of obligations. First, we have liabilities to do specific things, like pay our debts and live up to whatever promises we've made. Second, we have restrictions—obligations NOT to do things. If someone gives Cornell a million dollars for a scholarship fund, we can't use it to build a climbing wall. Finally, any assets left over must be put to work in the service of the mission, which is to serve our beneficiary. These are <u>*general*</u> obligations because the steward has some freedom here. Part of Cornell's mission is to discover, preserve, and disseminate knowledge; we can do that however we see fit, which might even include building a climbing wall, if we have unrestricted assets to build it.

"…Place the oxygen mask on yourself first before helping small children or others who may need your assistance."

The general obligation sounds a bit oppressive, doesn't it? Is it really true that when we have dealt with all our specific obligations, we have to use all of our remaining assets on society's behalf, not our own? Well, not exactly, because we ARE members of society, and often the best way for us to benefit society is to tend to our own needs—like putting on our own oxygen mask before helping others, and more generally, pursuing our purpose in life.

Moral Bookkeeping and Liberty

Balance Sheet	
Positive Liberty	Obstacles to Negative Liberty
	Liberty

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So you can think of this general obligation as being liberty: the ability to use your assets to benefit society as you see fit, after you've lived up to all of the demands to live up to specific obligations. Assets are like positive liberty, the power to take control of your life and realize your fundamental purpose. The absence of specific liabilities is like negative liberty, the absence of obstacles, barriers, or constraints to that power.

Moral Bookkeeping

Balance Sheet	
Rights Capacities Authorities Influence	Liabilities Restrictions Social Debts
	General Obligations

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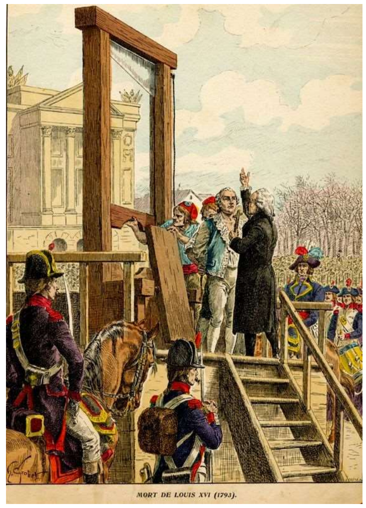
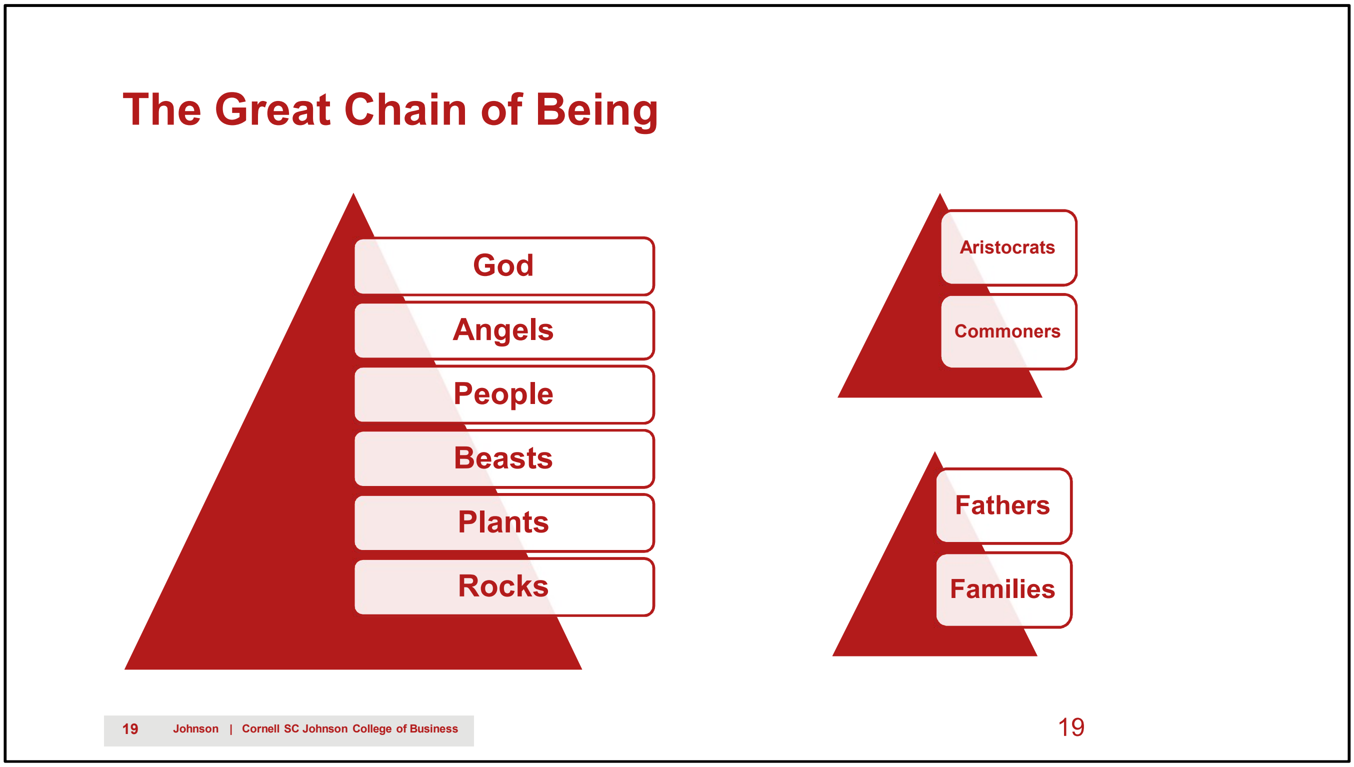
Now let’s flesh out the moral balance sheet. Assets are power, which tends to come in four categories. First are rights to direct how things are used, like cars and land. Second are personal capacities, like strength, intelligence or beauty. Next are authorities to make decisions, and the power to influence others. We can also add another type of specific obligation that is very common in morality—someone owes a debt to society because of their past misbehavior. Maybe they have to spend time in jail, or apologize, or make restitution. And then, of course, we have our general obligations. If I had more time, I’d walk you through how this articulates with the income statement, but if you want more, a little searching should take you to my Cornell blog, where I’ve posted my teaching materials.

The French Revolution



MORT DE LOUIS XVI (1793).

Now let's jump ahead to the French Revolution. As you probably know, in the late 1700's, French citizens deposed King Louis the 16th. But why? For us, sitting in a democracy in the 21st century, we might point to the tremendous unfairness of having a handful of aristocrats who, mostly just because of their birth, are protected by the law but barely bound by it, and a mass of commoners who were bound by the law but barely protected by it.



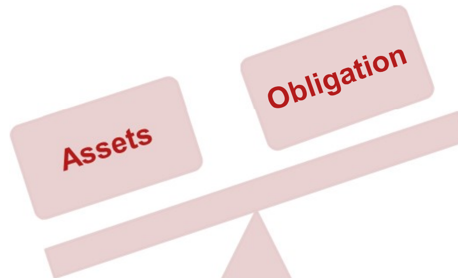
But that had been true for hundreds of years, and a lot of people bought into this social structure, because they saw the world as a **great chain of being**. This is a hierarchical view that became popular even before the middle ages. At the top is God, then Angels, then humans, then beasts, plants, and rocks. Everyone is a mix of what is above them and below them, so Angels are part God and part human, humans are part Angel and part Beast. And within each category there is a subhierarchy, with aristocrats above commoners, and fathers above their wives and children.

Recognition & Bookkeeping Principles

Who has:

Authorities to direct affairs (assets)?

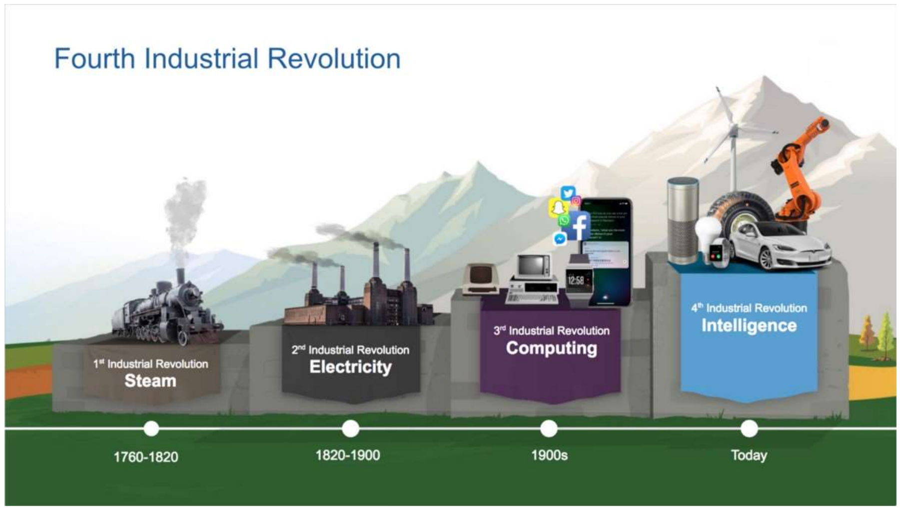
Duties to obey (obligations)



To put this in terms of the MAP, the Great Chain of Being is just an implementation of the recognition principle: it lays out society's view of what assets and obligations should be recognized in people's books. Kings had the authority to direct the resources and commoners, and fathers had that authority over their families. Commoners and families had obligations to obey. We might not see the world that way now, but they did then, and a lot of people around the world still do. And before we get too critical, let's remember the Subsidiarity Principle. We're not in a great position to tell people in a far away land, or in a time far from our own, how they should assign assets and obligations. The usual argument, which Shakespeare made repeatedly, is that doing away with the great chain of being would create disorder that would be far worse.

But the Recognition Principle isn't the only one at play in the French Revolution. The real instigator is that the Aristocracy violated the Bookkeeping Principle. Assets come with obligations, and with more assets come more obligations. And even in the great chain of being, Kings had the obligation to look after their subjects. Instead, they took everyone's money and spent it on themselves.

From Job Shot to Process Shop, and Back, and ???



Now let’s work our way to the present by walking through the four industrial revolutions.

The first and second industrial revolutions converted a mostly job-shop economy into a process shop economy. The rise of steam, and then electricity, led to a world of capital-intensive factories where workers would do the same thing over and over, rather than a different thing every time the old artisanal way. Owners invested heavily in governance, and imposed disproportional burdens on the governed—the powerless stewards who worked in the factories from morning till night, children never seeing daylight, breathing awful fumes, sharing in none of the gains. If you want to understand why Europe saw so many worker revolutions, read about the conditions imposed on them by the 2nd IR. The workers of the world indeed had little to lose but their chains.

The 3rd industrial revolution introduced computing into management, production, and consumption—think color television—which drove the creation of knowledge workers and the creative class. For many of these workers, this revolution gave them back the protection of working in a job shop, because they were being asked to use their expertise to tackle novel tasks, which makes direct and intrusive oversight infeasible and often counterproductive.

The 4th industrial revolution introduces actuated sensors, and bots, powered by artificial intelligence. Sensors provide us with accounts of performance, in magical and sometimes monstrous detail. Actuators perform some act on the basis of a sensor reading, they can hold people to account in incredibly powerful ways. And when actuated sensors are powered by artificial intelligence, we end up with bots and robots.

Sensors: Quantity has a quality all its own

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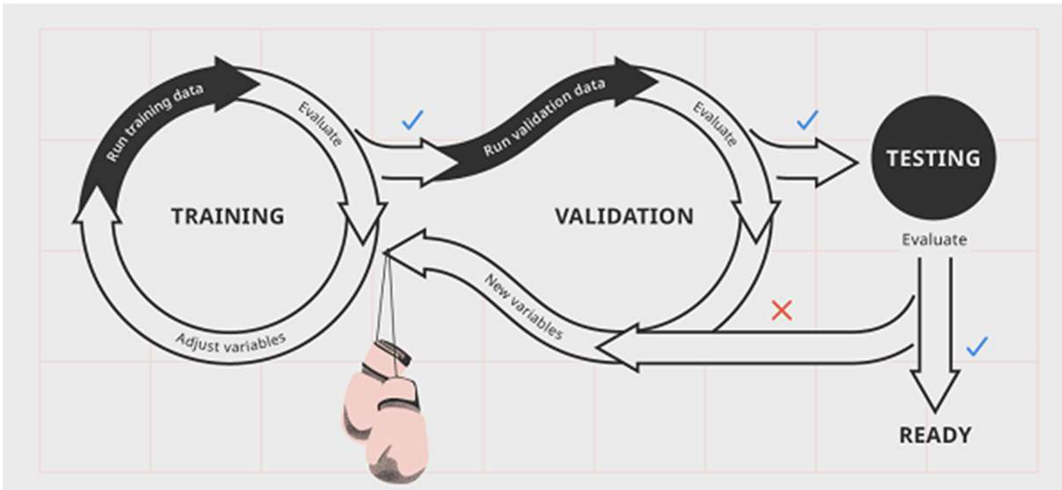
Sensors have always been a key part of accounting. But something changes when sensors are everywhere. There's a famous quote that quantity has a quality all its own. When sensors are everywhere, we live in a qualitatively different world. And we will, if we don't already. Cameras on every corner. Biosensors that track heart rates, respiration, sweat, and motion, to see whether a bus driver is getting sleepy. And increasingly, sensors are tied to actuators, which do something—the driver's sleepy; time for a little electric shock.

Is this world a magical one or a monstrous one? It all depends on how well we are seeing society, not just investors, as beneficiaries of stewardship, and how well we live up to the MAP, because actuated sensors vastly increase the power of governance. Is that power being used to steer people toward better social and moral performance, or just toward making a handful of people rich? Are the governed being treated well, or poorly?

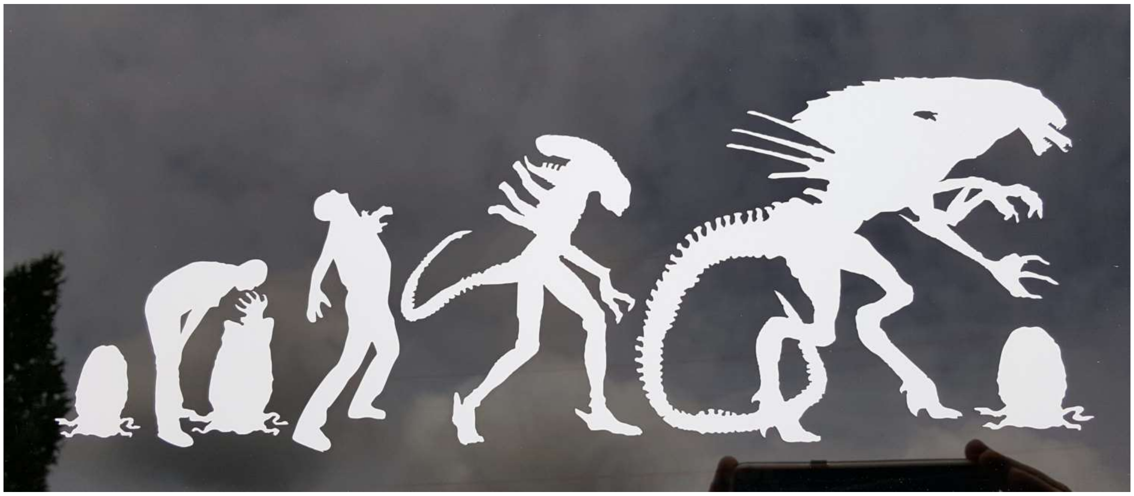
Next, we have bots and robots. I use the term bot very broadly, to include any algorithm that converts large data sets into some form of stewardship or governance, and a robot is just a bot with physical form, like this robot sheep herder. The distinction between an actuated sensor and a bot or robot is the locus of accountability. If I put a motion sensor somewhere, and have it turn on lights whenever it detects movement, that's a technology I can understand well enough to predict exactly what it will and won't do. So it doesn't make sense to talk about holding the sensor accountable—whatever it does is directly on me, so hold me accountable. But if I create a bot that I don't understand well, I'm not so directly accountable for its behavior. What I am accountable for, if I set that thing into the world, is making sure that the bot is ***held*** accountable.

Bots are bred and domesticated (trained)



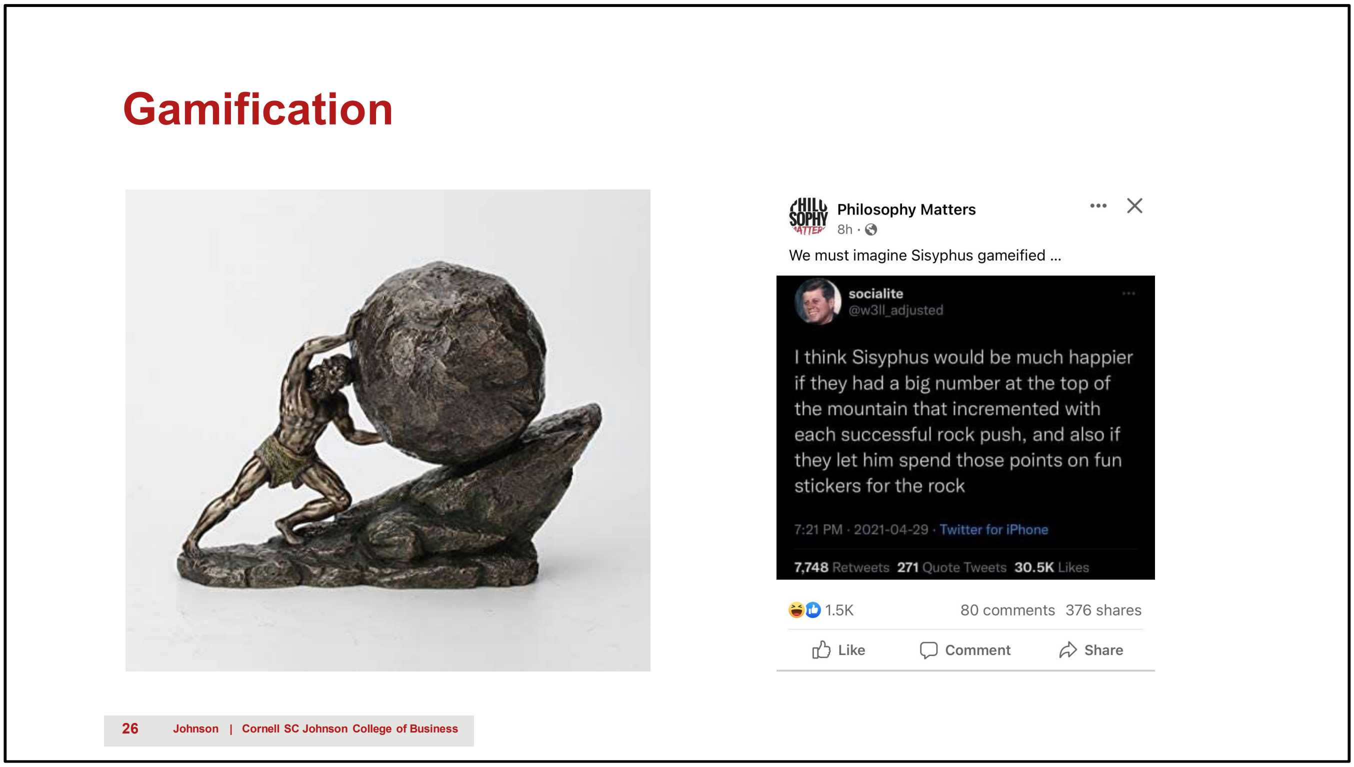
I find it helpful to view bots as alien creatures that are bred and domesticated by programmers. They are creatures because they act as if they have autonomy—we don't tell them what to do at every moment, we give them a scoring rule that tells them what types of outcomes are good and bad, we give them an algorithm for testing out different types of behaviors to see what score they'd get, and we give them a huge amount of data for testing, and we let them iterate and improve, and then we send them on their way.

Bots are Alien



Now, why are bots *alien*? By alien I mean very, very, unfamiliar. We simply don't understand why bots do what they do, even if we are the one that is programming them. This lack of understanding is literally built into the nature of machine learning. The statistics we use as academics are almost entirely about inference and explanation. But machine learning algorithms are designed for prediction, and give us little insight into why they do what they do.

So we need to look at what bots do and draw our own inferences of whether they are doing an acceptable job, and do our own regression models to understand what circumstances will help them do better or worse. And we end up needing to govern them much like we would any alien creature we barely understand—we'll keep careful account of their performance so we can understand, from the outside, not from the programming, what they do well and poorly, and we'll use controls to limit the damage they can do. And we'll breed and domesticate them, constantly refining algorithms and discarding the ones that do worse, and continuing on with the generations that do better. Slowly but surely we'll come to understand them, just as we came to understand dogs, and horses, and oxen, and sheep.

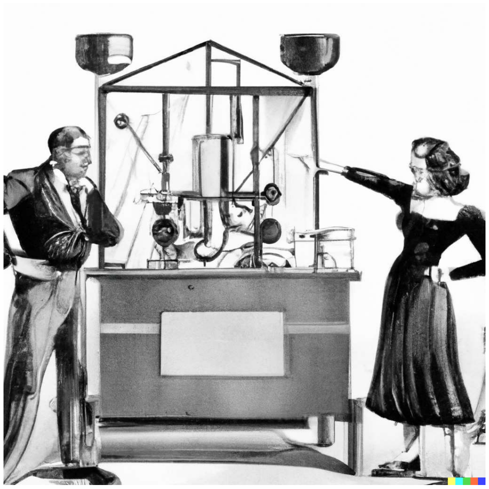


Once we have surveillance and bots, we're going to see amazing advances in gamification. Gamification is often defined as making work into a game, but to game theorists like me, work already is a game—that's the whole point of principal-agent models. Instead, it's about tweaking those games to exploit the subjective experiences of the players, so that they serve a function for our client. So to use an example Marietta Peytcheva sent me, Sisyphus was cursed to have to push a rock up a mountain for eternity, and someone says he'd be much happier if they had a big number at the top of the mountain that incremented with each successful push, and let him spend the points on fun stickers for the rock.

But gamification is more than making work fun. Most of us like to feel that at we are good at our jobs, that we have earned the respect of others, that we are developing social connections, that we are changing the world in some way, that we are achieving some new insight into the world. These are all subjective experiences, subjective, because they are entirely in the mind of the experiencer, and experiences because they're something people feel or perceive. Subjective experiences also include pain, anxiety, worry, frustration, curiosity, and any other emotion or internal mental state you can think of.

If we think like traditional accountants, with investors as the only beneficiary of performance, this gets scary pretty fast. Let's go back to Joan Luft's dissertation, which by my definition is precisely a demonstration of gamification: People find penalties painful, so we can exploit that in our governance designs. What if someone decides to use all of the surveillance and artificial intelligence they can to figure out how best to exploit everyone's subjective experiences. If we want gamification to be magical, rather than monstrous, we really need to think about how it treats the governed, who are members of society too. That makes it our goal to design accounting systems, including gamified ones, that treat the governed well for their own sake.

Accounting transforms conflicts between parties into conflicts between each party and the system



Conflicts

- Principal vs. Agent
- Peer vs. Peer
- Buyer vs. Seller
- Employee vs. Firm
- Firm vs. Society

I'll close by returning to my first question: why does there seem to be such a close link between accounting and morality? The answer is that accounting is one of humanity's go-to forms of conflict resolution. By conflict, I mean a persistent tension, not a one-time dispute. We're building systems, which limits our scope to addressing problems that recur often enough that we can anticipate where, how, and when they are likely to happen again. It's not hard to list the types of conflicts that can cause problems inside the firm. [List in slide]. One of the classics is the Principal-Agent conflict—bosses want their workers to work hard for little pay, but workers want to shirk for high pay. So we build systems that tie pay to performance in the best way possible.

That sets up another conflict, which is between the governance system and the people it governs. Maybe the boss starts using penalties to govern the worker, and the worker retaliates by doing the absolute minimum form of good performance—what now goes by the name "quiet quitting". These things happen, and accounting systems have to deal with them. In accounting, every conflict eventually comes down to a conflict between the governance system and those it governs.

And that's a really important point, because that's where accounting principles come from. We need to be able to explain to everyone why the systems we create are the best ones—we aren't tilting them toward one party or another, we're making a principled decision that works for the greater good. And how is that different from using moral reasoning to justify a moral decision.