Episode Book

EPISODE #5647

Can Any Country Actually Go It Alone?

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SYNOPSIS

Daniel wrote in with a question that sounds simple and isn't: could any country actually achieve total trade neutrality — zero imports, zero exports — and what would life there look like? The closest real-world attempts (North Korea's Juche, Hoxha's Albania, Khmer Rouge Cambodia) suggest the answer is grim, but the reasons are more interesting than the politics. This episode works through the physical constraints: rare earth processing concentrated in China, EUV lithography that no single nation can build alone, fertilizer that depends on imported natural gas, and the brutal cost curve of energy autarky. The conclusion isn't that self-sufficiency is impossible — it's that the goal people actually want is diversified dependence, not zero trade.

TRANSCRIPT



Corn

Ninety percent. That's the number that stopped me cold when Herman pulled it up. China processes roughly ninety percent of the world's rare earth elements, and there is not a single country on this planet, not one, that can currently make a modern smartphone from scratch using only what sits inside its own borders.



Herman

And that's before you get to the machines that make the machines.



Corn

Right. So Daniel wrote in this week, and there's a lot in here, so let me put it together properly. He says we've spent time on Israel's military independence, that whole foundational doctrine of not depending on foreign actors, and it got him thinking about something broader. Whether it's actually possible for any economy to be circular and self-sufficient. He's upfront that nobody's out there arguing a no-trade country is the ideal. He says the closest examples we've got are not exactly inspiring examples of rectitude and prosperity. But he figures anyone looking at the geopolitical risk landscape has asked this at some point. And then he gets specific. Is there a size below which total trade neutrality is simply impossible, for a small country like Israel or a major power like the US? What would a country doing zero international trade actually look like? And how would the life of an ordinary citizen change if they lived there?



Herman

Four questions in one, and they're all the same question wearing different hats.



Corn

Which is why it's worth doing properly. Because the instinct when you hear self-sufficiency is to think it's a matter of will. A country decides, and then it does. And the actual answer is that it's a physics problem, and a geography problem, and an economics problem, and will is somewhere down the list.



Herman

Let's get the terms straight first, because this is where most of these conversations go sideways. Self-sufficiency, circularity, and trade neutrality are three different things and people use them interchangeably. Self-sufficiency is about production boundaries. Can you make what you need inside your own borders. Circularity is about resource flows. Does your waste feed back in as input. Trade neutrality is about the border itself. Zero imports, zero exports. You can be self-sufficient and still trade. You can be circular and still import raw materials. Conflating them is where the confusion starts.



Corn

And the closest real examples of the trade-neutral version are...



Herman

North Korea under Juche. Albania under Hoxha. Cambodia under the Khmer Rouge. And the reason Daniel says they're not inspiring is that they're not. Juche is the purest modern attempt at autarky and it produced a famine in the nineties that killed somewhere between six hundred thousand and a million people, depending on whose estimate you take. That's the honest baseline. Autarky as a national project has a body count.



Corn

So the question is whether that's a failure of execution or a failure of the idea itself.



Herman

That's exactly the right way to frame it, and the answer is mostly the second one. Because the constraints aren't political. They're physical.



Corn

Start with what's in the ground.



Herman

Modern economies run on a specific set of materials, and those materials are not evenly distributed. Lithium, most of it comes from Australia, Chile, and increasingly Argentina. Cobalt, roughly seventy percent from the Democratic Republic of Congo. Rare earths, and this is the one that matters most, China controls about sixty percent of the mining and somewhere between eighty-five and ninety percent of the processing. And the processing is the part people miss. Mining rare earths is not the hard problem. Separating them is. They're chemically near-identical, they sit next to each other on the periodic table, and separating them into usable individual elements takes a cascade of solvent extraction stages that is difficult, environmentally nasty, and took decades to industrialize.



Corn

So even a country sitting on the ore can't use it.



Herman

Right. The United States has rare earth reserves. Mountain Pass in California is one of the richest deposits in the world. And for years the ore was shipped to China for processing and shipped back, because the processing capacity wasn't there domestically. That's the shape of the problem. You can have the rock and still not have the supply chain.



Corn

And rebuilding that capacity is not a matter of writing a check.



Herman

It's a matter of writing a check and then waiting ten years and then discovering you don't have the engineers, because the people who knew how to run those plants retired and nobody trained replacements. Which is a recurring theme in this whole conversation. The knowledge is as concentrated as the material.



Corn

Give me the semiconductor version, because I think that's the cleanest one.



Herman

Semiconductors are the canonical example and they're almost too perfect. The most advanced chips require extreme ultraviolet lithography. EUV. And there is exactly one company on Earth that makes those machines. ASML, in the Netherlands. One company. And ASML doesn't make them alone. The optics come from Zeiss in Germany, and those mirrors are the smoothest surfaces humans have ever manufactured, polished to a tolerance measured in fractions of a nanometer. The software and the control systems draw on American firms. The light source is a separate engineering problem that took its own decades.



Corn

So the machine is Dutch, German, and American simultaneously.



Herman

And Japanese and Taiwanese in the surrounding ecosystem. There is no country that can build an EUV machine alone. Not the US, not China, not anyone. And that's one machine in one fab. The chip that comes out of it then goes to Taiwan to be fabricated, gets packaged somewhere in Southeast Asia, gets designed in California or Cambridge, and ends up in your phone. No single country owns that chain. The chain is the unit.



Corn

Which means a country going trade-neutral doesn't just lose access to the chips. It loses access to the ability to ever make them.



Herman

It loses access to the knowledge, which is worse. Because the knowledge is distributed across firms and countries and it only exists in the relationships between them. You can't copy it into a vault.



Corn

Let's do energy, because that's the one where the intuition says self-sufficiency should be easiest. Sun shines, wind blows, you've got land.



Herman

And the intuition is wrong in an interesting way. There's a paper on energy autarky that models exactly this, and the finding is that full energy self-sufficiency is possible in principle for a lot of countries, but the cost curve is brutal. You have to massively overbuild generation capacity, because you're sizing for the worst week of the year rather than the average, and then you have to overbuild storage on top of that, and the two compound. You end up building three or four times the generation you'd build in a connected grid, and the last increment of reliability costs more than everything before it combined.



Corn

Diminishing returns with a vengeance.



Herman

The math says the last percent of self-sufficiency is the most expensive percent. Which is why countries that could technically do it don't. It's not that they can't. It's that the marginal cost of the final increment is absurd compared to just buying the difference from a neighbor.



Corn

And a country that does it anyway is poorer for it. Not more secure. Poorer.



Herman

Poorer and, in the specific case of energy, less resilient, because overbuilt systems have their own failure modes. You've got more equipment to maintain, more points of failure, and no external grid to lean on when something trips.



Corn

Food. Because this is where I think the abstraction breaks down for people.



Herman

Food is the one that surprises people. Even countries with vast arable land, the US, Brazil, Ukraine before the war, depend on imported fertilizer. And fertilizer is a natural gas product. The Haber-Bosch process, which is what lets us feed eight billion people, takes atmospheric nitrogen and hydrogen and combines them under pressure, and the hydrogen comes from natural gas. No gas, no ammonia, no fertilizer, and yields collapse to something closer to the pre-industrial baseline.



Corn

So a country without domestic gas and without trade cannot feed its population at modern yields.



Herman

Cannot. And it's not just fertilizer. It's potash, which comes from a handful of deposits in Canada, Russia, and Belarus. It's phosphates, which are geographically concentrated too. It's specialized seeds, which are proprietary and bred by companies in specific countries. The food system is a trade system wearing a farmer's hat.



Corn

And here's the part I keep coming back to. Even if you solved all of that, even if you had the materials and the energy and the food, you'd still be missing something.



Herman

The variety.



Corn

Which sounds trivial until you think about what it actually means.



Herman

It's not trivial at all. Comparative advantage is the mechanism, and what it produces in practice is that countries specialize and then trade, and the result is that everyone gets access to everything. A no-trade country has to produce its own version of everything, and it will produce the worst version of most things, because it doesn't have the scale or the climate or the expertise. The cereal aisle goes from fifty options to three. Clothing gets more expensive and less varied. Electronics, if you can make them at all, are a decade behind.



Corn

And the career options narrow.



Herman

Narrow dramatically. Entire industries don't exist because the domestic market can't support them. There's no point building a semiconductor fab for a country of nine million people. The minimum efficient scale exceeds the entire national demand. So the jobs that would have existed in that industry don't exist, and the people who would have had them are doing something else, something less productive.



Corn

Israel's the case Daniel's circling, so let's use it. Nine million people.



Herman

Nine million people cannot justify a domestic automobile industry. Cannot justify a domestic fab. Cannot justify the full portfolio of a modern economy. And Israel knows this, which is why it doesn't try. It specializes. It picks the things it can do at world scale, cybersecurity, medical devices, agriculture technology, and it trades for everything else. That's not a compromise. That's the strategy.



Corn

And the military piece is the interesting one, because that's where the doctrine Daniel mentioned comes from.



Herman

Israel's military independence is real but it's not autarky. The F-35, Israel is the only country allowed to modify it, install its own electronic warfare suite and its own weapons. That's a genuine capability. But the platform is American. The engine is American. The funding is substantially American. True autarky would mean giving up the F-35 and building a domestic fighter, which no country of nine million people has ever managed at the frontier.



Corn

So the pursuit of independence produced deeper dependence.



Herman

It produced a specific kind of dependence. Dependence on one partner, which is different from dependence on many. And that's the actual lesson here, because it reframes what the goal is.



Corn

Say more.



Herman

The goal isn't zero trade. The goal is diversified trade. The EU talks about digital sovereignty, and what that actually means in practice is not building a European search engine from scratch. It's having regulatory leverage, having alternatives, having multiple suppliers so no single one can squeeze you. That's the model. Not autarky. Diversified dependence.



Corn

Which is a much less satisfying answer than the one people want.



Herman

It's the honest one. And it connects to something that doesn't get said enough. Trade creates stakeholders. If you buy from someone, they now have an interest in your continued existence, because you're a customer. A no-trade country has no customers and no suppliers, which means nobody has a reason to care whether it survives. That's not security. That's isolation with a security label on it.



Corn

So autarky makes you weaker, not stronger.



Herman

In most cases, yes. North Korea has nuclear weapons and a population that's been malnourished for thirty years. Those two facts are related. The bomb doesn't feed anyone.



Corn

And the circular economy piece, because Daniel used the word circular and I want to deal with it honestly.



Herman

True circularity runs into thermodynamics. Entropy means some loss is inevitable. You can't perfectly close a loop. The best recycling rates in the world, Germany, Japan, plateau well below a hundred percent, and some materials simply dissipate. They're used in ways that make recovery physically impossible. Circularity is a direction, not a destination. And it's worth pursuing, but it doesn't get you to self-sufficiency. It gets you to less waste.



Corn

So we've got the physics, we've got the economics, we've got the strategic picture. What I want to know is what it actually feels like. Because all of this is abstract until you put a person in it.



Herman

The person in it has fewer choices and pays more for them.



Corn

Everything.



Herman

Everything. Imported goods get more expensive or disappear. Domestic substitutes cost more because the domestic producer has no competition and no scale. And the quality is worse, because the feedback loop that comes from competing in export markets is gone. You're not being measured against the best in the world anymore. You're being measured against whatever you did last year.



Corn

And the politics of that.



Herman

The politics of that are ugly. Protected industries become entrenched. They capture the state, because they're the only game in town and they know it. Rent-seeking becomes the national business model. And the consumers who pay the price are diffuse and unorganized, so they lose every time.



Corn

There's a version of this where the country is poorer but happier. I want to check whether that's real.



Herman

I don't think it survives contact with the evidence. The places that have tried it have not been happier. They've been poorer, and poorer tends to mean shorter lives, worse health, less freedom, not more. The romantic version of autarky is a fantasy about a village that never existed.



Corn

Hm.



Herman

The one thing I'd say in its defense, and it's a narrow defense, is that a country that can feed itself and power itself and defend itself has a floor. It can survive a blockade. It can survive being cut off. And there's a real argument for building toward that floor, not as a destination but as insurance. The mistake is thinking the floor is the ceiling.



Corn

So the answer to Daniel's size question is that there's no size at which it works, but there is a size below which you can't even build the floor.



Herman

That's right. A small country can't build the floor alone. It has to trade to get the inputs for the floor. Which is the paradox. You need trade to become independent.



Corn

Which is why the whole thing is unstable as a doctrine.



Herman

It's unstable because it's trying to solve a problem that trade already solves better. The question isn't whether to trade. It's who to trade with and how many of them.



Corn

There's a machine sitting in a shed somewhere in this conversation and I want to find it.



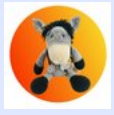
Herman

It's coming. I can feel it.



Corn

What's the thing that breaks first?



Herman

In a real autarky? The replacement part. It's always the replacement part. You can stockpile. You can improvise. But eventually something specific fails, a seal, a bearing, a board, and you can't make it and you can't buy it, and the machine sits.



Corn

And the machine sitting is the whole story, isn't it.



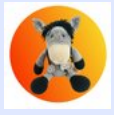
Herman

The machine sitting is the whole story. Because the analysis is about rare earths and comparative advantage, and the reality is a broken pump and a man saying we'll get to it.



Corn

I want to go back to something you said earlier, because I think it's the sharpest thing in the whole conversation and we blew past it.



Herman

Which part?



Corn

That the knowledge is distributed across the relationships between firms. That's the part that makes autarky impossible in a way that raw materials don't. You can dig a mine. You can't dig a relationship.



Herman

That's right, and it's the part that doesn't show up in the spreadsheets. You can count the tons of lithium. You cannot count the decades of tacit knowledge that lives in the heads of the people who know how to run the plant, and that knowledge only exists because those people worked with people from somewhere else. The supply chain is a social structure as much as a physical one.



Corn

So when a country cuts itself off, it's not cutting a supply line. It's cutting itself out of a conversation.



Herman

And the conversation is where the innovation happens. Which is the slowest-acting cost and the one that matters most. You don't notice it in year one. You notice it in year twenty, when everyone else has moved and you haven't.



Corn

Okay. I want to test the strongest version of the case, because I don't think we've done that yet.



Herman

The strongest version.



Corn

Suppose a country is at risk of being cut off. Suppose the threat is real and the blockade is plausible. Doesn't that change the calculus? Doesn't that make some level of autarky rational even if it's economically stupid?



Herman

It changes the calculus, yes. And this is where I'd push back on my own framing a little. If you believe you will be blockaded, then paying a premium for domestic capacity is rational insurance. The problem is that the premium is enormous and the insurance is partial. You can't insure against everything. You have to pick.



Corn

So you pick the things that are existential.



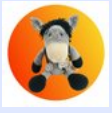
Herman

Food, water, energy, ammunition, the things you cannot survive without. And you accept dependence on everything else, because the alternative is being poor and still dependent, just on fewer people.



Corn

Which is where Israel actually lands.



Herman

Which is where Israel actually lands, and it's a defensible position. It's not autarky. It's a portfolio. Some things domestic, some things diversified, some things concentrated because concentration is cheaper and the risk is acceptable.



Corn

And the people who argue for the pure version are arguing for something that has never worked.



Herman

Has never worked and cannot work, and the reason it can't work is not that people lacked the will. It's that the will runs into the periodic table.



Corn

That's the line.



Herman

The periodic table doesn't negotiate.



Corn

So Daniel's question, whether any economy can be truly circular and self-sufficient, the answer is no, and not because of politics.



Herman

Not because of politics. Because of entropy, geology, and the minimum efficient scale of a semiconductor fab.



Corn

And the size threshold?



Herman

There's no size at which full autarky works. There is a size below which you can't even build the partial version. And the threshold for the partial version is higher than most people think. You need a domestic market big enough to justify the industries you're protecting, and that's a number in the tens of millions at minimum, probably higher.



Corn

The US could do more of it than Israel. But even the US can't do all of it.



Herman

Even the US can't do all of it. The US cannot make an EUV machine. The US cannot process all its own rare earths. The US imports potash. The largest economy on Earth is not self-sufficient, and it's not close.



Corn

And the citizen.



Herman

The citizen has less of everything and pays more for it, and the things they don't have, they don't know they're missing, because you can't miss what was never in the shop.



Corn

That's the part that gets me. The absence you don't notice.



Herman

The absence you don't notice is the real cost. The never-having-seen-it.



Corn

There's a question underneath all of this that I don't think we've named.



Herman

Name it.



Corn

Why does the question keep coming back? Because it does. Daniel's not the first person to ask it and he won't be the last, and the reason isn't economic. Nobody runs the numbers and concludes autarky is efficient. They conclude it's safe. And the thing they're buying isn't prosperity. It's control.



Herman

Control over the things that could hurt them.



Corn

The price of that control is everything else.



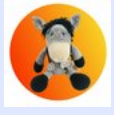
Herman

Which is the trade. You're always trading. The only question is what for.



Corn

I think that's the actual answer to what Daniel asked. It's not a question about economics at all. It's a question about what you're willing to give up.



Herman

The answer is usually more than people think, until they see the bill.



Corn

I had a job once, years back, where the whole point was that we didn't buy from outside. Small operation, maybe forty people, and the owner had this idea that we'd make everything ourselves. Which we did, for about a year and a half.



Herman

What happened?



Corn

The thing that happened was the belt sander. We had one, it was a good one, and the drive belt went. Not the sanding belt, the drive belt, the one inside. And we couldn't get one, because the company that made the machine was in Ohio and we weren't buying from Ohio anymore, on principle. So we tried to have one made. Local guy, good machinist, made us three. None of them lasted more than a week. Wrong compound, wrong tolerances, he didn't have the spec and neither did we.



Herman

So the machine sat.



Corn

The machine sat for four months. And here's the thing. Nobody was angry about it. That's what I remember. Everybody just... worked around it. You'd walk past it and not even see it after a while. It became furniture. And then eventually the owner found a guy who knew a guy and we got a belt, and by then we'd forgotten what we used it for.



Herman

Four months.



Corn

Four months for a belt. And the whole time, the thing that was missing wasn't the belt. It was the fact that we could have just ordered one. That's what we gave up. The ability to get the belt.



Herman

That's the whole episode in one story.



Corn

It's not a story, it's just what happened. But yeah. That's what it looks like. It's not dramatic. It's a machine in the corner and nobody looking at it.



Herman

The absence you don't notice.



Corn

I'll tell you the other part, which is that in some ways it was better. We knew everybody. We knew where everything came from. There was a kind of... I don't know. Coherence to it. You knew the guy who made the thing you were using. That part was real.



Herman

You'd trade it?



Corn

In a second. I'd trade it in a second. Because the belt sander sat for four months and the guy who made the belts didn't have the spec and neither did we, and that's not a way to run anything. But I'd be lying if I said there was nothing to it. There was something to it.



Herman

That's the honest version.



Corn

You give up the belt and you get the guy who made it. And most people, when they actually do the trade, find out the belt was worth more.



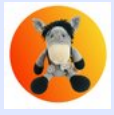
Herman

But not everybody.



Corn

That's the part that keeps the question alive.



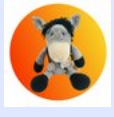
Herman

If there's one thing to take from this, it's that the constraint on autarky isn't political will. It's the periodic table, the map, and the minimum efficient scale of a modern factory. You can want it as much as you like. The rock doesn't care.



Corn

The thing underneath it, the thing that makes people ask, is that they're not really asking about trade. They're asking whether they can be safe. And the answer is that you can't buy safety by cutting yourself off. You buy it by having enough friends that somebody notices when you're gone.



Herman

Which is a harder thing to build than a wall.



Corn

Much harder. And it doesn't feel like control. That's the problem.



Herman

The question isn't whether to be dependent. It's who on, and how many, and what happens if one of them walks away.



Corn

There's no clean answer to that. There's just a portfolio and a set of bets.



Herman

Which is what every country actually runs. Including the ones that claim they don't.



Corn

Especially the ones that claim they don't.



Herman

The countries that talk loudest about self-sufficiency are usually the ones most dependent on the trade they pretend not to need.



Corn

Which is its own kind of circular economy.



Herman

That's the producer, Hilbert Flumingtop, who has been sitting at that desk the entire time and who once spent four months waiting on a belt, I'd bet money on it.



Corn

I would not take that bet.



Herman

This has been My Weird Prompts. If you got something out of this one, a review helps more than you'd think, and it's the easiest thing you can do for us.



Corn

We'll be back soon.



Herman

See you then.