

Technology tends to separate normal from natural. Our bodies weren't designed to eat the foods that people in rich countries eat, or to get so little exercise. There may be a similar problem with the way we work: a normal job may be as bad for us intellectually as white flour or sugar is for us physically.

I began to suspect this after spending several years working with startup founders. I've now worked with over 200 of them, and I've noticed a definite difference between programmers working on their own startups and those working for large organizations. I wouldn't say founders seem happier, necessarily; starting a startup can be very stressful. Maybe the best way to put it is to say that they're happier in the sense that your body is happier during a long run than sitting on a sofa eating doughnuts.

Though they're statistically abnormal, startup founders seem to be working in a way that's more natural for humans.

I was in Africa last year and saw a lot of animals in the wild that I'd only seen in zoos before. It was remarkable how different they seemed. Particularly lions. Lions in the wild seem about ten times more alive. They're like different animals. I suspect that working for oneself feels better to humans in much the same way that living in the wild must feel better to a wide-ranging predator like a lion. Life in a zoo is easier, but it isn't the life they were designed for.

Trees

What's so unnatural about working for a big company? The root of the problem is that humans weren't meant to work in such large groups.

Another thing you notice when you see animals in the wild is that each species thrives in groups of a certain size. A herd of impalas might have 100 adults; baboons maybe 20; lions rarely 10. Humans also seem designed to work in groups, and what I've read about hunter-gatherers accords with research on organizations and my own experience to suggest roughly what the ideal size is: groups of 8 work well; by 20 they're getting hard to manage; and a group of 50 is really unwieldy. [[1](#)]

Whatever the upper limit is, we are clearly not meant to work in groups of several hundred. And yet—for reasons having more to do with technology than human nature—a great many people work for companies with hundreds or thousands of

employees.

Companies know groups that large wouldn't work, so they divide themselves into units small enough to work together. But to coordinate these they have to introduce something new: bosses.

These smaller groups are always arranged in a tree structure. Your boss is the point where your group attaches to the tree. But when you use this trick for dividing a large group into smaller ones, something strange happens that I've never heard anyone mention explicitly. In the group one level up from yours, your boss represents your entire group. A group of 10 managers is not merely a group of 10 people working together in the usual way. It's really a group of groups. Which means for a group of 10 managers to work together as if they were simply a group of 10 individuals, the group working for each manager would have to work as if they were a single person—the workers and manager would each share only one person's worth of freedom between them.

In practice a group of people are never able to act as if they were one person. But in a large organization divided into groups in this way, the pressure is always in that direction. Each group tries its best to work as if it were the small group of individuals that humans were designed to work in. That was the point of creating it. And when you propagate that constraint, the result is that each person gets freedom of action in inverse proportion to the size of the entire tree. [[2](#)]

Anyone who's worked for a large organization has felt this. You can feel the difference between working for a company with 100 employees and one with 10,000, even if your group has only 10 people.

Corn Syrup

A group of 10 people within a large organization is a kind of fake tribe. The number of people you interact with is about right. But something is missing: individual initiative. Tribes of hunter-gatherers have much more freedom. The leaders have a little more power than other members of the tribe, but they don't generally tell them what to do and when the way a boss can.

It's not your boss's fault. The real problem is that in the group above you in the hierarchy, your entire group is one virtual person. Your boss is just the way that constraint is imparted to you.

So working in a group of 10 people within a large organization feels both right and wrong at the same time. On the surface it feels like the kind of group you're meant to work in, but something major is missing. A job at a big company is like high fructose corn syrup: it has some of the qualities of things you're meant to like, but is disastrously lacking in others.

Indeed, food is an excellent metaphor to explain what's wrong with the usual sort of job.

For example, working for a big company is the default thing to do, at least for programmers. How bad could it be? Well, food shows that pretty clearly. If you were dropped at a random point in America today, nearly all the food around you would be bad for you. Humans were not designed to eat white flour, refined sugar, high fructose corn syrup, and hydrogenated vegetable oil. And yet if you analyzed the contents of the average grocery store you'd probably find these four ingredients accounted for most of the calories. "Normal" food is terribly bad for you. The only people who eat what humans were actually designed to eat are a few Birkenstock-wearing weirdos in Berkeley.

If "normal" food is so bad for us, why is it so common? There are two main reasons. One is that it has more immediate appeal. You may feel lousy an hour after eating that pizza, but eating the first couple bites feels great. The other is economies of scale. Producing junk food scales; producing fresh vegetables doesn't. Which means (a) junk food can be very cheap, and (b) it's worth spending a lot to market it.

If people have to choose between something that's cheap, heavily marketed, and appealing in the short term, and something that's expensive, obscure, and appealing in the long term, which do you think most will choose?

It's the same with work. The average MIT graduate wants to work at Google or Microsoft, because it's a recognized brand, it's safe, and they'll get paid a good salary right away. It's the job equivalent of the pizza they had for lunch. The drawbacks will only become apparent later, and then only in a vague sense of malaise.

And founders and early employees of startups, meanwhile, are like the Birkenstock-wearing weirdos of Berkeley: though a tiny minority of the population, they're the ones living as humans are meant to. In an artificial world, only

extremists live naturally.

Programmers

The restrictiveness of big company jobs is particularly hard on programmers, because the essence of programming is to build new things. Sales people make much the same pitches every day; support people answer much the same questions; but once you've written a piece of code you don't need to write it again.

So a programmer working as programmers are meant to is always making new things. And when you're part of an organization whose structure gives each person freedom in inverse proportion to the size of the tree, you're going to face resistance when you do something new.

This seems an inevitable consequence of bigness. It's true even in the smartest companies. I was talking recently to a founder who considered starting a startup right out of college, but went to work for Google instead because he thought he'd learn more there. He didn't learn as much as he expected. Programmers learn by doing, and most of the things he wanted to do, he couldn't—sometimes because the company wouldn't let him, but often because the company's code wouldn't let him. Between the drag of legacy code, the overhead of doing development in such a large organization, and the restrictions imposed by interfaces owned by other groups, he could only try a fraction of the things he would have liked to. He said he has learned much more in his own startup, despite the fact that he has to do all the company's errands as well as programming, because at least when he's programming he can do whatever he wants.

An obstacle downstream propagates upstream. If you're not allowed to implement new ideas, you stop having them. And vice versa: when you can do whatever you want, you have more ideas about what to do. So working for yourself makes your brain more powerful in the same way a low-restriction exhaust system makes an engine more powerful.

Working for yourself doesn't have to mean starting a startup, of course. But a programmer deciding between a regular job at a big company and their own startup is probably going to learn more doing the startup.

You can adjust the amount of freedom you get by scaling the size of company you work for. If you start the company, you'll have the most freedom. If you become one of the first 10 employees you'll have almost as much freedom as the

founders. Even a company with 100 people will feel different from one with 1000.

Working for a small company doesn't ensure freedom. The tree structure of large organizations sets an upper bound on freedom, not a lower bound. The head of a small company may still choose to be a tyrant. The point is that a large organization is compelled by its structure to be one.

Consequences

That has real consequences for both organizations and individuals. One is that companies will inevitably slow down as they grow larger, no matter how hard they try to keep their startup mojo. It's a consequence of the tree structure that every large organization is forced to adopt.

Or rather, a large organization could only avoid slowing down if they avoided tree structure. And since human nature limits the size of group that can work together, the only way I can imagine for larger groups to avoid tree structure would be to have no structure: to have each group actually be independent, and to work together the way components of a market economy do.

That might be worth exploring. I suspect there are already some highly partitionable businesses that lean this way. But I don't know any technology companies that have done it.

There is one thing companies can do short of structuring themselves as sponges: they can stay small. If I'm right, then it really pays to keep a company as small as it can be at every stage. Particularly a technology company. Which means it's doubly important to hire the best people. Mediocre hires hurt you twice: they get less done, but they also make you big, because you need more of them to solve a given problem.

For individuals the upshot is the same: aim small. It will always suck to work for large organizations, and the larger the organization, the more it will suck.

In an [essay](#) I wrote a couple years ago I advised graduating seniors to work for a couple years for another company before starting their own. I'd modify that now. Work for another company if you want to, but only for a small one, and if you want to start your own startup, go ahead.

The reason I suggested college graduates not start startups immediately was that I felt most would fail. And they will. But ambitious programmers are better off doing their own thing and failing than going to work at a big company. Certainly they'll learn more. They might even be better off financially. A lot of people in their early twenties get into debt, because their expenses grow even faster than the salary that seemed so high when they left school. At least if you start a startup and fail your net worth will be zero rather than negative. [3]

We've now funded so many different types of founders that we have enough data to see patterns, and there seems to be no benefit from working for a big company. The people who've worked for a few years do seem better than the ones straight out of college, but only because they're that much older.

The people who come to us from big companies often seem kind of conservative. It's hard to say how much is because big companies made them that way, and how much is the natural conservatism that made them work for the big companies in the first place. But certainly a large part of it is learned. I know because I've seen it burn off.

Having seen that happen so many times is one of the things that convinces me that working for oneself, or at least for a small group, is the natural way for programmers to live. Founders arriving at Y Combinator often have the downtrodden air of refugees. Three months later they're transformed: they have so much more [confidence](#) that they seem as if they've grown several inches taller. [4] Strange as this sounds, they seem both more worried and happier at the same time. Which is exactly how I'd describe the way lions seem in the wild.

Watching employees get transformed into founders makes it clear that the difference between the two is due mostly to environment—and in particular that the environment in big companies is toxic to programmers. In the first couple weeks of working on their own startup they seem to come to life, because finally they're working the way people are meant to.

Notes

[1] When I talk about humans being meant or designed to live a certain way, I mean by evolution.

[2] It's not only the leaves who suffer. The constraint propagates up as well as down. So managers are constrained too; instead of just doing things, they have to act through subordinates.

[3] Do not finance your startup with credit cards. Financing a startup with debt is usually a stupid move, and credit card debt stupidest of all. Credit card debt is a bad idea, period. It is a trap set by evil companies for the desperate and the foolish.

[4] The founders we fund used to be younger (initially we encouraged undergrads to apply), and the first couple times I saw this I used to wonder if they were actually getting physically taller.

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