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The Case for Working With Your Hands

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The television show "Deadliest Catch" depicts commercial crab fishermen in the Bering Sea. Another, "Dirty Jobs," shows all kinds of grueling work; one episode featured a guy who inseminates turkeys for a living. The weird fascination of these shows must lie partly in the fact that such confrontations with material reality have become exotically unfamiliar. Many of us do work that feels more surreal than real. Working in an office, you often find it difficult to see any tangible result from your efforts. What exactly have you accomplished at the end of any given day? Where the chain of cause and effect is opaque and responsibility diffuse, the experience of individual agency can be elusive. "Dilbert," "The Office" and similar portrayals of cubicle life attest to the dark absurdism with which many Americans have come to view their white-collar jobs.

Is there a more "real" alternative (short of inseminating turkeys)?

High-school shop-class programs were widely dismantled in the 1990s as educators prepared students to become "knowledge workers." The imperative of the last 20 years to round up every warm body and send it to college, then to the cubicle, was tied to a vision of the future in which we somehow take leave of material reality and glide about in a pure information economy. This has not come to pass. To begin with, such work often feels more enervating than gliding. More fundamentally, now as ever, somebody has to actually do things: fix our cars, unclog our toilets, build our houses.

When we praise people who do work that is straightforwardly useful, the praise often betrays an assumption that they had no other options. We idealize them as the salt of the earth and emphasize the sacrifice for others their work may entail. Such sacrifice does indeed occur — the hazards faced by a lineman restoring power during a storm come to mind. But what if such work answers as well to a basic human need of the one who does it? I take this to be the suggestion of Marge Piercy's poem "To Be of Use," which concludes with the lines "the pitcher longs for water to carry/and a person for work that is real." Beneath our gratitude for the lineman may rest envy.

This seems to be a moment when the useful arts have an especially compelling economic rationale. A car mechanics' trade association reports that repair shops have seen their business jump significantly in the current recession: people aren't buying new cars; they are fixing the ones they have. The current downturn is likely to pass eventually. But there are also systemic changes in the economy, arising from information technology, that have the surprising effect of making the manual trades — plumbing, electrical work, car repair — more attractive as careers. The Princeton economist Alan Blinder argues that the crucial distinction in the emerging labor market is not between those with more or less education, but between those whose services can be delivered over a wire and those who must do their work in person or on site. The latter will find their livelihoods more secure against outsourcing to distant countries. As Blinder puts it, "You can't hammer a nail over the Internet." Nor can the Indians fix your car. Because they are in India.

If the goal is to earn a living, then, maybe it isn't really true that 18-year-olds need to be imparted with a sense of panic about getting into college (though they certainly need to learn). Some people are hustled off to college, then to the cubicle, against their own inclinations and natural bents, when they would rather be learning to build things or fix things. One shop teacher suggested to me that "in schools, we create artificial learning environments for our children that they know to be contrived and undeserving of their full attention and engagement. Without the opportunity to learn through the hands, the world remains abstract and distant, and the passions for learning will not be engaged."

A gifted young person who chooses to become a mechanic rather than to accumulate academic credentials is viewed as eccentric, if not self-destructive. There is a pervasive anxiety among parents that there is only one track to success for their children. It runs through a series of gates controlled by prestigious institutions. Further, there is wide use of drugs to medicate boys, especially, against their natural tendency toward action, the better to "keep things on track." I taught briefly in a public high school and would have loved to have set up a Ritalin fogger in my classroom. It is a rare person, male or female, who is naturally inclined to sit still for 17 years in school, and then indefinitely at work.

The trades suffer from low prestige, and I believe this is based on a simple mistake. Because the work is dirty, many people assume it is also stupid. This is not my experience. I have a small

business as a motorcycle mechanic in Richmond, Va., which I started in 2002. I work on Japanese and European motorcycles, mostly older bikes with some "vintage" cachet that makes people willing to spend money on them. I have found the satisfactions of the work to be very much bound up with the intellectual challenges it presents. And yet my decision to go into this line of work is a choice that seems to perplex many people.

After finishing a Ph.D. in political philosophy at the University of Chicago in 2000, I managed to stay on with a one-year postdoctoral fellowship at the university's Committee on Social Thought. The academic job market was utterly bleak. In a state of professional panic, I retreated to a makeshift workshop I set up in the basement of a Hyde Park apartment building, where I spent the winter tearing down an old Honda motorcycle and rebuilding it. The physicality of it, and the clear specificity of what the project required of me, was a balm. Stumped by a starter motor that seemed to check out in every way but wouldn't work, I started asking around at Honda dealerships. Nobody had an answer; finally one service manager told me to call Fred Cousins of Triple O Service. "If anyone can help you, Fred can."

I called Fred, and he invited me to come to his independent motorcycle-repair shop, tucked discreetly into an unmarked warehouse on Goose Island. He told me to put the motor on a certain bench that was free of clutter. He checked the electrical resistance through the windings, as I had done, to confirm there was no short circuit or broken wire. He spun the shaft that ran through the center of the motor, as I had. No problem: it spun freely. Then he hooked it up to a battery. It moved ever so slightly but wouldn't spin. He grasped the shaft, delicately, with three fingers, and tried to wiggle it side to side. "Too much free play," he said. He suggested that the problem was with the bushing (a thick-walled sleeve of metal) that captured the end of the shaft in the end of the cylindrical motor housing. It was worn, so it wasn't locating the shaft precisely enough. The shaft was free to move too much side to side (perhaps a couple of hundredths of an inch), causing the outer circumference of the rotor to bind on the inner circumference of the motor housing when a current was applied. Fred scrounged around for a Honda motor. He found one with the same bushing, then used a "blind hole bearing puller" to extract it, as well as the one in my motor. Then he gently tapped the new, or rather newer, one into place. The motor worked! Then Fred gave me an impromptu dissertation on the peculiar metallurgy of these Honda starter-motor bushings of the mid-'70s. Here was a scholar.

Over the next six months I spent a lot of time at Fred's shop, learning, and put in only occasional appearances at the university. This was something of a regression: I worked on cars throughout high school and college, and one of my early jobs was at a Porsche repair shop. Now I was rediscovering the intensely absorbing nature of the work, and it got me thinking about possible livelihoods.

As it happened, in the spring I landed a job as executive director of a policy organization in Washington. This felt like a coup. But certain perversities became apparent as I settled into the job. It sometimes required me to reason backward, from desired conclusion to suitable premise. The organization had taken certain positions, and there were some facts it was more fond of than others. As its figurehead, I was making arguments I didn't fully buy myself. Further, my boss seemed intent on retraining me according to a certain cognitive style — that of the corporate world, from which he had recently come. This style demanded that I project an image of rationality but not indulge too much in actual reasoning. As I sat in my K Street office, Fred's life as an independent tradesman gave me an image that I kept coming back to: someone who really knows what he is doing, losing himself in work that is genuinely useful and has a certain integrity to it. He also seemed to be having a lot of fun.

Seeing a motorcycle about to leave my shop under its own power, several days after arriving in the back of a pickup truck, I don't feel tired even though I've been standing on a concrete floor all day. Peering into the portal of his helmet, I think I can make out the edges of a grin on the face of a guy who hasn't ridden his bike in a while. I give him a wave. With one of his hands on the throttle and the other on the clutch, I know he can't wave back. But I can hear his salute in the exuberant "bwaaAAAAP!" of a crisp throttle, gratuitously revved. That sound pleases me, as I know it does him. It's a ventriloquist conversation in one mechanical voice, and the gist of it is "Yeah!"

After five months at the think tank, I'd saved enough money to buy some tools I needed, and I quit and went into business fixing bikes. My shop rate is $40 per hour. Other shops have rates as high as $70 per hour, but I tend to work pretty slowly. Further, only about half the time I spend in the shop ends up being billable (I have no employees; every little chore falls to me), so it usually works out closer to $20 per hour — a modest but decent wage. The business goes up and down; when it is down I have supplemented it with writing. The work is sometimes frustrating, but it is never irrational.

And it frequently requires complex thinking. In fixing motorcycles you come up with several imagined trains of cause and effect for manifest symptoms, and you judge their likelihood before tearing anything down. This imagining relies on a mental library that you develop. An internal combustion engine can work in any number of ways, and different manufacturers have tried different approaches. Each has its own proclivities for failure. You also develop a library of sounds and smells and feels. For example, the backfire of a too-lean fuel mixture is subtly different from an ignition backfire.

As in any learned profession, you just have to know a lot. If the motorcycle is 30 years old, from an obscure maker that went out of business 20 years ago, its tendencies are known mostly through lore. It would probably be impossible to do such work in isolation, without access to a collective historical memory; you have to be embedded in a community of mechanic-antiquarians. These relationships are maintained by telephone, in a network of reciprocal favors that spans the country. My most reliable source, Fred, has such an encyclopedic knowledge of obscure European motorcycles that all I have been able to offer him in exchange is deliveries of obscure European beer.

There is always a risk of introducing new complications when working on old motorcycles, and this enters the diagnostic logic. Measured in likelihood of screw-ups, the cost is not identical for all avenues of inquiry when deciding which hypothesis to pursue. Imagine you're trying to figure out why a bike won't start. The fasteners holding the engine covers on 1970s-era Hondas are Phillips head, and they are almost always rounded out and corroded. Do you really want to check the condition of the starter clutch if each of eight screws will need to be drilled out and extracted, risking damage to the engine case? Such impediments have to be taken into account. The attractiveness of any hypothesis is determined in part by physical circumstances that have no logical connection to the diagnostic problem at hand. The mechanic's proper response to the situation cannot be anticipated by a set of rules or algorithms.

There probably aren't many jobs that can be reduced to rule-following and still be done well. But in many jobs there is an attempt to do just this, and the perversity of it may go unnoticed by those who design the work process. Mechanics face something like this problem in the factory service manuals that we use. These manuals tell you to be systematic in eliminating variables, presenting an idealized image of diagnostic work. But they never take into account the risks of working on old machines. So you put the manual away and consider the facts before you. You do this because ultimately you are responsible to the motorcycle and its owner, not to some procedure.

Some diagnostic situations contain a lot of variables. Any given symptom may have several possible causes, and further, these causes may interact with one another and therefore be difficult to isolate. In deciding how to proceed, there often comes a point where you have to step back and get a larger gestalt. Have a cigarette and walk around the lift. The gap between theory and practice stretches out in front of you, and this is where it gets interesting. What you need now is the kind of judgment that arises only from experience; hunches rather than rules. For me, at least, there is more real thinking going on in the bike shop than there was in the think tank.

Put differently, mechanical work has required me to cultivate different intellectual habits. Further, habits of mind have an ethical dimension that we don't often think about. Good diagnosis requires attentiveness to the machine, almost a conversation with it, rather than assertiveness, as in the position papers produced on K Street. Cognitive psychologists speak of "metacognition," which is the activity of stepping back and thinking about your own thinking. It is what you do when you stop for a moment in your pursuit of a solution, and wonder whether your understanding of the problem is adequate. The slap of worn-out pistons hitting their cylinders can sound a lot like loose valve tappets, so to be a good mechanic you have to be constantly open to the possibility that you may be mistaken. This is a virtue that is at once cognitive and moral. It seems to develop because the mechanic, if he is the sort who goes on to become good at it, internalizes the healthy functioning of the motorcycle as an object of passionate concern. How else can you explain the elation he gets when he identifies the root cause of some problem?

This active concern for the motorcycle is reinforced by the social aspects of the job. As is the case with many independent mechanics, my business is based entirely on word of mouth. I sometimes barter services with machinists and metal fabricators. This has a very different feel than transactions with money; it situates me in a community. The result is that I really don't want to mess up anybody's motorcycle or charge more than a fair price. You often hear people complain about mechanics and other tradespeople whom they take to be dishonest or incompetent. I am sure this is sometimes justified. But it is also true that the mechanic deals with a large element of chance.

I once accidentally dropped a feeler gauge down into the crankcase of a Kawasaki Ninja that was practically brand new, while performing its first scheduled valve adjustment. I escaped a complete tear-down of the motor only through an operation that involved the use of a stethoscope, another pair of trusted hands and the sort of concentration we associate with a bomb squad. When finally I laid my fingers on that feeler gauge, I felt as if I had cheated death. I don't remember ever feeling so alive as in the hours that followed.

Often as not, however, such crises do not end in redemption. Moments of elation are counterbalanced with failures, and these, too, are vivid, taking place right before your eyes. With stakes that are often high and immediate, the manual trades elicit heedful absorption in work. They are punctuated by moments of pleasure that take place against a darker backdrop: a keen awareness of catastrophe as an always-present possibility. The core experience is one of individual responsibility, supported by face-to-face interactions between tradesman and customer.

Contrast the experience of being a middle manager. This is a stock figure of ridicule, but the sociologist Robert Jackall spent years inhabiting the world of corporate managers, conducting interviews, and he poignantly describes the "moral maze" they feel trapped in. Like the mechanic, the manager faces the possibility of disaster at any time. But in his case these disasters feel

arbitrary; they are typically a result of corporate restructurings, not of physics. A manager has to make many decisions for which he is accountable. Unlike an entrepreneur with his own business, however, his decisions can be reversed at any time by someone higher up the food chain (and there is always someone higher up the food chain). It's important for your career that these reversals not look like defeats, and more generally you have to spend a lot of time managing what others think of you. Survival depends on a crucial insight: you can't back down from an argument that you initially made in straightforward language, with moral conviction, without seeming to lose your integrity. So managers learn the art of provisional thinking and feeling, expressed in corporate doublespeak, and cultivate a lack of commitment to their own actions. Nothing is set in concrete the way it is when you are, for example, pouring concrete.

Those who work on the lower rungs of the information-age office hierarchy face their own kinds of unreality, as I learned some time ago. After earning a master's degree in the early 1990s, I had a hard time finding work but eventually landed a job in the Bay Area writing brief summaries of academic journal articles, which were then sold on CD-ROMs to subscribing libraries. When I got the phone call offering me the job, I was excited. I felt I had grabbed hold of the passing world — miraculously, through the mere filament of a classified ad — and reeled myself into its current. My new bosses immediately took up residence in my imagination, where I often surprised them with my hidden depths. As I was shown to my cubicle, I felt a real sense of being honored. It seemed more than spacious enough. It was my desk, where I would think my thoughts — my unique contribution to a common enterprise, in a real company with hundreds of employees. The regularity of the cubicles made me feel I had found a place in the order of things. I was to be a knowledge worker.

But the feel of the job changed on my first day. The company had gotten its start by providing libraries with a subject index of popular magazines like Sports Illustrated. Through a series of mergers and acquisitions, it now found itself offering not just indexes but also abstracts (that is, summaries), and of a very different kind of material: scholarly works in the physical and biological sciences, humanities, social sciences and law. Some of this stuff was simply incomprehensible to anyone but an expert in the particular field covered by the journal. I was reading articles in Classical Philology where practically every other word was in Greek. Some of the scientific journals were no less mysterious. Yet the categorical difference between, say, Sports Illustrated and Nature Genetics seemed not to have impressed itself on the company's decision makers. In some of the titles I was assigned, articles began with an abstract written by the author. But even in such cases I was to write my own. The reason offered was that unless I did so, there would be no "value added" by our product. It was hard to believe I was going to add anything other than error and confusion to such material. But then, I hadn't yet been trained.

My job was structured on the supposition that in writing an abstract of an article there is a method that merely needs to be applied, and that this can be done without understanding the text. I was actually told this by the trainer, Monica, as she stood before a whiteboard, diagramming an abstract. Monica seemed a perfectly sensible person and gave no outward signs of suffering delusions. She didn't insist too much on what she was telling us, and it became clear she was in a position similar to that of a veteran Soviet bureaucrat who must work on two levels at once: reality and official ideology. The official ideology was a bit like the factory service manuals I mentioned before, the ones that offer procedures that mechanics often have to ignore in order to do their jobs.

My starting quota, after finishing a week of training, was 15 articles per day. By my 11th month at the company, my quota was up to 28 articles per day (this was the normal, scheduled increase). I was always sleepy while at work, and I think this exhaustion was because I felt trapped in a contradiction: the fast pace demanded complete focus on the task, yet that pace also made any real concentration impossible. I had to actively suppress my own ability to think, because the more you think, the more the inadequacies in your understanding of an author's argument come into focus. This can only slow you down. To not do justice to an author who had poured himself into the subject at hand felt like violence against what was best in myself.

The quota demanded, then, not just dumbing down but also a bit of moral re-education, the opposite of the kind that occurs in the heedful absorption of mechanical work. I had to suppress my sense of responsibility to the article itself, and to others — to the author, to begin with, as well as to the hapless users of the database, who might naïvely suppose that my abstract reflected the author's work. Such detachment was made easy by the fact there was no immediate consequence for me; I could write any nonsense whatever.

Now, it is probably true that every job entails some kind of mutilation. I used to work as an electrician and had my own business doing it for a while. As an electrician you breathe a lot of unknown dust in crawl spaces, your knees get bruised, your neck gets strained from looking up at the ceiling while installing lights or ceiling fans and you get shocked regularly, sometimes while on a ladder. Your hands are sliced up from twisting wires together, handling junction boxes made out of stamped sheet metal and cutting metal conduit with a hacksaw. But none of this damage touches the best part of yourself.

You might wonder: Wasn't there any quality control? My supervisor would periodically read a few of my abstracts, and I was sometimes corrected and told not to begin an abstract with a dependent clause. But I was never confronted with an abstract I had written and told that it did not adequately reflect the article. The quality standards were the generic ones of grammar, which could be applied without my supervisor having to read the article at hand. Rather, my supervisor and I both were held to a metric that was conjured by someone remote from the

work process — an absentee decision maker armed with a (putatively) profit-maximizing calculus, one that took no account of the intrinsic nature of the job. I wonder whether the resulting perversity really made for maximum profits in the long term. Corporate managers are not, after all, the owners of the businesses they run.

At lunch I had a standing arrangement with two other abstracters. One was from my group, a laconic, disheveled man named Mike whom I liked instantly. He did about as well on his quota as I did on mine, but it didn't seem to bother him too much. The other guy was from beyond the partition, a meticulously groomed Liberian named Henry who said he had worked for the C.I.A. He had to flee Liberia very suddenly one day and soon found himself resettled near the office parks of Foster City, Calif. Henry wasn't going to sweat the quota. Come 12:30, the three of us would hike to the food court in the mall. This movement was always thrilling. It involved traversing several "campuses," with ponds frequented by oddly real seagulls, then the lunch itself, which I always savored. (Marx writes that under conditions of estranged labor, man "no longer feels himself to be freely active in any but his animal functions.") Over his burrito, Mike would recount the outrageous things he had written in his abstracts. I could see my own future in such moments of sabotage — the compensating pleasures of a cubicle drone. Always funny and gentle, Mike confided one day that he was doing quite a bit of heroin. On the job. This actually made some sense.

How was it that I, once a proudly self-employed electrician, had ended up among these walking wounded, a "knowledge worker" at a salary of $23,000? I had a master's degree, and it needed to be used. The escalating demand for academic credentials in the job market gives the impression of an ever-more-knowledgeable society, whose members perform cognitive feats their unschooled parents could scarcely conceive of. On paper, my abstracting job, multiplied a millionfold, is precisely what puts the futurologist in a rapture: we are getting to be so smart! Yet my M.A. obscures a more real stupidification of the work I secured with that credential, and a wage to match. When I first got the degree, I felt as if I had been inducted to a certain order of society. But despite the beautiful ties I wore, it turned out to be a more proletarian existence than I had known as an electrician. In that job I had made quite a bit more money. I also felt free and active, rather than confined and stultified.

A good job requires a field of action where you can put your best capacities to work and see an effect in the world. Academic credentials do not guarantee this.

Nor can big business or big government — those idols of the right and the left — reliably secure such work for us. Everyone is rightly concerned about economic growth on the one hand or unemployment and wages on the other, but the character of work doesn't figure much in political debate. Labor unions address important concerns like workplace safety and family leave, and management looks for greater efficiency, but on the nature of the job itself, the dominant political and economic paradigms are mute. Yet work forms us, and deforms us, with broad public consequences.

The visceral experience of failure seems to have been edited out of the career trajectories of gifted students. It stands to reason, then, that those who end up making big decisions that affect all of us don't seem to have much sense of their own fallibility, and of how badly things can go wrong even with the best of intentions (like when I dropped that feeler gauge down into the Ninja). In the boardrooms of Wall Street and the corridors of Pennsylvania Avenue, I don't think you'll see a yellow sign that says "Think Safety!" as you do on job sites and in many repair shops, no doubt because those who sit on the swivel chairs tend to live remote from the consequences of the decisions they make. Why not encourage gifted students to learn a trade, if only in the summers, so that their fingers will be crushed once or twice before they go on to run the country?

There is good reason to suppose that responsibility has to be installed in the foundation of your mental equipment — at the level of perception and habit. There is an ethic of paying attention that develops in the trades through hard experience. It inflects your perception of the world and your habitual responses to it. This is due to the immediate feedback you get from material objects and to the fact that the work is typically situated in face-to-face interactions between tradesman and customer.

An economy that is more entrepreneurial, less managerial, would be less subject to the kind of distortions that occur when corporate managers' compensation is tied to the short-term profit of distant shareholders. For most entrepreneurs, profit is at once a more capacious and a more concrete thing than this. It is a calculation in which the intrinsic satisfactions of work count — not least, the exercise of your own powers of reason.

Ultimately it is enlightened self-interest, then, not a harangue about humility or public-spiritedness, that will compel us to take a fresh look at the trades. The good life comes in a variety of forms. This variety has become difficult to see; our field of aspiration has narrowed into certain channels. But the current perplexity in the economy seems to be softening our gaze. Our peripheral vision is perhaps recovering, allowing us to consider the full range of lives worth choosing. For anyone who feels ill suited by disposition to spend his days sitting in an office, the question of what a good job looks like is now wide open.

Matthew B. Crawford lives in Richmond, Va. His book, "Shop Class as Soulcraft: An Inquiry Into the Value of Work," from which this essay is adapted, will be published this week by

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