An Anarchist Critique of Power Relations within Institutions

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I. Introduction

Anarchism is a critique of the principle of authority and its negative effects on society. In the popular understanding of anarchism this is most commonly associated with the anarchist critique of the state. But the anarchist critiques of the authority principle as it involves the state are just as applicable to authority relations within institutions.

Just as in society as a whole, authority within hierarchical institutions serves primarily to promote the interests of those who possess it at the expense of those who do not. Authority shifts costs, effort and negative consequences downward, and shifts benefits upward; as such, it is a form of privilege. And like all forms of privilege, it creates fundamental conflicts of interest.

These conflicts of interest, in turn, result in all sorts of related inefficiencies and irrationalities. They take the form, in particular, of distorted information flows and perverse incentives.

II. Distorted Information Flows and Irrationality

When power intrudes into human relationships it creates a zero-sum relationship between superiors and subordinates. In such an environment, it is impossible in principle for those in authority to receive accurate information about the state of affairs within an organization from those subject to their command. According to anarchist writer Robert Anton Wilson,

> A civilization based on authority-and-submission is a civilization without the means of self-correction. *Effective* communication flows only one way: from master-group to servile-group. Any cyberneticist knows that such a one-way communication channel lacks feedback and cannot behave 'intelligently.'

> The epitome of authority-and-submission is the Army, and the control-and-communication network of the Army has every defect a cyberneticist's nightmare could conjure. Its typical patterns of behavior are immortalized in folklore as SNAFU (situation normal—all fucked-up). … In less extreme … form these are the typical conditions of any authoritarian group, be it a corporation, a nation, a family, or a whole civilization.[1]

Wilson, writing with Robert Shea, developed the same theme in a fictional format in *The Illuminatus! Trilogy*. "A man with a gun is told only that which people assume will not provoke him to pull the trigger."

> Since all authority and government are based on force, the master class, with its burden of omniscience, faces the servile class, with its burden of nescience, precisely as a highwayman faces his victim. Communication is possible only between equals. The master class never abstracts enough information from the servile class to know what is actually going on in the world where the actual productivity of society occurs. … The result can only be progressive deterioration among the rulers.[2]

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[1] R. A. Wilson, "Thirteen Choruses for the Divine Marquis," *Coincidance—A Head Test* (Grand Junction, CO: Hilaritas 2018 [1988]) www.deepleafproductions.com/wilsonlibrary/texts/raw-marquis.html. Original emphasis.

[2] Robert Shea and R. A. Wilson, *The Illuminatus! Trilogy* (New York, NY: Dell 1975) 498.

This inability of organizational leadership to obtain sufficient or accurate information from below, and the hostile perception of superiors by subordinates, mean that those in the lower echelons of an institution hoard information and use it as a source of rents. The zero-sum relationship resulting from the power differential means that the organizational pyramid will be opaque to those at its top. As organization theorist Kenneth Boulding put it,

> There is a great deal of evidence that almost all organizational structures tend to produce false images in the decision-maker, and that the larger and more authoritarian the organization, the better the chance that its top decision-makers will be operating in purely imaginary worlds.[3]

In *Seeing Like a State* James C. Scott makes the concept of *mētis* (i.e. distributed, situational, job-related knowledge) do much the same work as distributed or situational knowledge did in Friedrich Hayek's "The Uses of Knowledge in Society." And like Wilson, he associates it with mutuality—"as opposed to imperative, hierarchical coordination."[4] Although Scott's primary focus is on the state's attempts to render society legible and subject to its control, the same principles apply to organizational leadership ("seeing like a boss"). Scott's follow-up to *Seeing Like a State* was *The Art of Not Being Governed*, on the reciprocal effort by lower orders to render themselves illegible to governing authorities, and hence ungovernable. This is equally true of subordinates within an organization who attempt to render themselves illegible to their superiors in order to evade control and exploitation. The information-hoarding evoked by authority is directly at odds with the effective use of knowledge. For *mētis* to be effectively brought to bear within an organization, there must be two-way communication between equals, where those in contact with the situation—the people actually doing the work—are in a position of equality with those making the decisions, or actually make the decisions themselves.

Not only had Wilson previously noted this connection between mutuality and accurate information in "Thirteen Choruses," but (like Scott) he alluded to Proudhon:

> [Proudhon's] system of voluntary association (anarchy) is based on the simple communication principles that an authoritarian system means one-way communication, or stupidity, and a libertarian system means two-way communication, or rationality.

> The essence of authority, as he saw, was Law—that is … effective communication running one way only. The essence of a libertarian system, as he also saw, was Contract—that is, mutual agreement—that is, effective communication running both ways.

An institutional hierarchy interferes with the judgment of Hayek's "people-on-the-spot," and with the aggregation of dispersed knowledge of circumstances, in exactly the same way a state does in society at large.

Hierarchical organizations are, to use the phrase of Martha Feldman and James March, *systematically* stupid.[5] They are incapable of making effective use of the knowledge of their members,

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[3] Kenneth Boulding, "The Economics of Knowledge and the Knowledge of Economics," *American Economic Review* 56.1–2 (March 1966): 8.

[4] James Scott, *Seeing Like a State* (New Haven, CT: Yale UP 1999) 6–7.

[5] Martha S. Feldman and James G. March, "Information in Organizations as Signal and Symbol," *Administrative Science Quarterly* 26 (April 1981); it should be noted, in fairness, that Feldman and March were attempting—unsuccessfully in my opinion—to defend corporations against the charge of systematic stupidity.

so that they are less than the sum of their parts. Because a hierarchical institution is unable to aggregate the intelligence of its members and bring it to bear effectively on the policy-making process, policies have unintended consequences. Once policies have been made, organizational leadership cannot obtain accurate feedback as to its effects. It's not that the top echelons of a hierarchy are made up of people who are especially dumb; it's that hierarchy, by its very nature, makes *anyone* in those positions dumb. The members of a hierarchy are smarter as individuals than they are collectively. Nobody—not Bill Gates, not Jeff Bezos, not even the Randian superman John Galt—is "smart" enough to manage a large, hierarchical organization or make it function rationally. As Matt Yglesias put it,

> the business class, as a set, has a curious and somewhat incoherent view of capitalism and why it's a good thing. Indeed, it's in most respects a backwards view that strongly contrasts with the economic or political science take on why markets work.
>
> The basic business outlook is very focused on the key role of the *executive*. Good, profitable, growing firms are run by brilliant executives. And the ability of the firm to grow and be profitable is evidence of its executives' brilliance. This is part of the reason that CEO salaries need to keep escalating—recruiting the best is integral to success. The leaders of large firms become revered figures. … Their success stems from overall brilliance. …
>
> The thing about this is that if this were generally true—if the CEOs of the Fortune 500 were brilliant economic seers—then it would really make a lot of sense to implement socialism. Real socialism. Not progressive taxation to finance a mildly redistributive welfare state. But 'let's let Vikram Pandit and Jeff Immelt centrally plan the economy—after all, they're really brilliant!'
>
> But in the real world, the point of markets isn't that executives are clever and bureaucrats are dimwitted. The point is that *nobody* is all that brilliant.[6]

No matter how intelligent managers are as *individuals*, a bureaucratic hierarchy insulates those at the top from the reality of what's going on below, and makes their intelligence less *usable*.

III. Irrational Incentives and Conflicts of Interest

Because the senior management of large institutions don't live under the effects of their policy, and they are insulated from negative feedback from those who do suffer, the CEO of one organization will happily inform their counterparts at other organizations of how wonderfully their organization's new "best practice" worked out. One of the central functions of a hierarchy is to tell naked emperors how great their new clothes look.

When someone operates on the assumption that they will internalize the consequences of their own actions, they have an incentive to anticipate what could go wrong. And they continually revise their decisions in response to subsequent experience. Normally functioning human

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[6] Matthew Yglesias, "Two Views of Capitalism," Yglesias, Nov. 22, 2008, http://yglesias.thinkprogress.org/2008/11/two_views_of_capitalism/. Original emphasis.

beings—that is, those of us who are in contact with our environment and not insulated from it by our own authority—are constantly correcting our courses of action.

Authority short-circuits this feedback process. Because it shifts the negative consequences of decisions downward and the benefits upward, decision-makers operate based on a distorted cost–benefit calculus so that it benefits them to adopt policies whose net social effects are negative. And because it blocks negative feedback, the leadership of an institution is subject to the functional equivalent of a psychotic break with reality.

This is a principle that operates fractally. If institutional leadership is able to adopt policies and practices beyond the point of net negative returns, on a societal level entire industries, or institutional complexes, are able to follow organizational models centered on such counter-productive practices.

Ivan Illich, in *Tools for Conviviality*, used the term "second watershed" to refer to the adoption of technologies, organizational approaches, policies, etc., beyond the point of "net social disutility" or "counter-productivity." The first threshold of a technology or tool results in net social benefit. But beyond a certain point, increasing reliance on that technology results in net social costs and increased disempowerment and dependency to those who rely on it. Rather than being a service to the individual, the technology reduces them to an accessory to a machine or to a bureaucracy.[7]

The classic example is the automobile. The cheap motorcar originally served those in areas of low population density, like farmers, who were underserved by in-town transit systems or inter-city rail. But as towns and cities were redesigned around "car culture" (i.e. monoculture residential suburbs and big-box stores or strip malls linked by freeways replaced mixed-use communities where work and shopping were within foot, bike or public transit range of home), the automobile became a necessity for everyone. And most towns and cities continue to follow the urban design approach of the mid-twentieth century which created that state of affairs, even when that approach is clearly counter-productive and exacerbates social pathologies. The orthodox prescription for traffic congestion is to build new subsidized freeways, which only generate even more traffic as new subdivisions and strip malls spring up around the newly-built cloverleafs.

What Illich failed to recognize was the role of authority relations in going beyond the second watershed and creating counter-productivity. Indeed, he framed such results as the inevitable trajectory in adoption of a technology if society did not actually resort to the authority principle to *prevent* it. But in fact the social pathologies of the second watershed are possible only when some are in a position of privilege from which they can use power to force the negative externalities of a given decision on others while appropriating the benefits of it for themselves. Privilege—coercive authority—is a mechanism for separating the good and ill effects of a policy or practice from each other, and diverting them to different persons or classes. Because of such authority, the privileged individual does not fully internalize all the positive and negative consequences of their behavior on a single balance sheet. When people deal with one another as equals, on the other hand, no one is able to adopt a technology beyond its net negative effects because no one is in a position to externalize the negative effects on others.

Where authority exists, dominant institutions are able to flourish well past the point at which they're a net drain on society. Although they are failures from the standpoint of the majority of

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[7] Ivan Illich, *Tools for Conviviality* (New York, NY: Harper 1973) xxii-iii, 84–5.

people in society, their performance is entirely a success from the standpoint of those who collect the CEO salaries and bonuses. Large institutions are "successful" at achieving goals that are largely artificial—goals defined primarily by the interests of their governing hierarchies, rather than by their ostensible customers or those directly responsible for serving customer needs.[8]

Hierarchical institutions treat not only front-line production workers, but also customers or clients, as means to management's ends. Edgar Z. Friedenberg coined the term "conscript clienteles" to describe this phenomenon.

> A large proportion of the gross national product of every industrialized nation consists of activities which provide no satisfaction to, and may be intended to humiliate, coerce, or destroy, those who are most affected by them; and of public services in which the taxpayer pays to have something very expensive done to other persons who have no opportunity to reject the service. This process is a large-scale economic development which I call the *reification of clienteles*. ...

> Although they are called 'clients,' members of conscript clienteles are not regarded as customers by the bureaucracies that service them, since they are not free to withdraw or withhold their custom or to look elsewhere for service. They are treated as raw material that the service organization needs to perform its social function and continue in existence.[9]

> Taken together, a large proportion of the labor force [he estimated about a third] employed in modern society is engaged in processing people according to other people's regulations and instructions. They are not accountable to the people they operate on, and ignore or overlook any feedback they may receive from them.[10]

Friedenberg limited his use of the term largely to bureaucracies directly funded with taxpayer money, and those like schools and prisons whose "clients" were literally unable to refuse service. The public schools, for example.

> It does not take many hours of observation—or attendance—in a public school to learn, from the way the place is actually run, that the pupils are there for the sake of the school, not the other way round.[11]

> This, too, is money spent providing goods and services to people who have no voice in determining what those goods and services shall be or how they shall be administered; and who have no lawful power to withhold their custom by refusing to attend even if they and their parents feel that what the schools provide is distasteful or injurious. They are provided with textbooks that, unlike any other work, from the Bible

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[8] On the other hand, organizational structures like networks, which are based on two-way feedback between equals, result in high rates of "failure." As Clay Shirky puts it, open-source software is a threat because it outfails proprietary systems. It can experiment and fail at less cost. Because failure is more costly to a hierarchy, hierarchies are biased "in favor of predictable but substandard outcomes." *Here Comes Everybody: The Power of Organizing without Organizations* (New York, NY: Penguin 2008) 245. Failure also reflects the empowerment of workers and customers; most products in the corporate economy are only considered "good enough" because customers are powerless.

[9] Edgar Z. Friedenberg, *The Disposal of Liberty and Other Industrial Wastes* (Garden City, NY: Anchor-Doubleday 1976) 1–2. Original emphasis.

[10] Friedenberg 18.

[11] Ibid. 2.

to the sleaziest pornography, no man would buy for his personal satisfaction. They are, precisely, not 'trade books'; rather, they are adopted for the compulsory use of hundreds of thousands of other people by committees, no member of which would have bought a single copy for his own library.[12]

School children certainly fulfill the principal criterion for membership in a reified clientele: being there by compulsion. It is less immediately obvious that they serve as raw material to be processed for the purposes of others, since this processing has come to be defined by the society as preparing the pupil for advancement within it. ... Whatever the needs of young people might have been, no public school system developed in response to them until an industrial society arose to demand the creation of holding pens from which a steady and carefully monitored supply of people trained to be punctual, literate, orderly and compliant and graded according to qualities determining employability from the employer's point of view could be released into the economy as needed.[13]

In so doing he significantly underestimated the prevalence of institutions managing conscript clienteles. He neglected, for one thing, those in the private sector whose clients are nominally free to refuse their services, but likely won't because competition is restricted by cartels or oligopoly markets of one kind or another. Consider, for example, the number of goods that are designed by one stovepiped R&D bureaucracy for sale to the stovepiped procurement bureaucracy of another institution, to be used by people to whom neither bureaucracy is remotely accountable; this is the reason the enterprise "productivity" software foisted on employees by corporate IT departments is so godawful, and why patient care equipment sold to hospitals is so poorly designed. Likewise when intellectual property restrictions prevent competition in design quality, or worse yet poor design is permanently institutionalized via path dependency even after patents expire.

The zero-sum relationship between superiors and subordinates within a hierarchy also results in irrationalities because, given the fundamental conflict of interest, those in direct contact with a situation cannot be trusted to act on their own judgment and initiative. Because the institution does not exist as a vehicle for the goals of its members, there is no intrinsic connection between their personal motivation and their roles in the organization. Institutions must therefore resort to standardized work rules, job descriptions, and all the rest of the Weberian–Taylorist model of bureaucratic rationality. Those who know most about a situation and are the best judges of alternative courses of action have no interest in common with the leadership of the organization. Because someone might use her initiative in ways detrimental to the interests of the organization, a set of rules must be set in place to prevent anyone from doing anything at all. Unlike self-managed organizations and horizontal networks, which treat the human brain as an asset, hierarchical rules systems treat it as a risk to be mitigated.

But this is entirely rational, from the perspective of those involved. Because of the fundamental conflict of interest built into the authority relations of a hierarchy, workers have absolutely no incentive to contribute their judgment to improving work processes, and every incentive to sabotage efficiency. They know that any contribution they make to increased productivity will be expropriated by management in the form of downsizings, speed-ups and increased management

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[12] Ibid. 6.
[13] Ibid. 16.

compensation. Hence workers commonly engage in "satisficing," or doing the minimum necessary to keep their jobs, and management must spend enormous amounts of money on front-line supervisors or monitoring and surveillance technologies to protect themselves from a workforce whose interests are fundamentally at odds with their own.

Job descriptions and union work rules are the other side of the coin to Taylorist work rules. Management cannot be trusted with the discretion to make the most efficient use of labor because it will inevitably abuse that discretion to its own benefit. Work rules, whether imposed by management or by labor, result from mutual distrust within a hierarchy. Power, to repeat, creates zero-sum relationships by definition. Superiors attempt to externalize effort on subordinates and skim off the benefits of increased productivity for themselves. Because subordinates know their contributions to organizational productivity will be expropriated by management, subordinates rationally minimize their expenditure of effort and do the minimum necessary to avoid getting fired. Both superiors and subordinates filter or hoard information of benefit to the other party, and attempt to maximize the rents from keeping each other ignorant. In this zero-sum relation, where each side can only benefit at the expense of the other, each party seeks mechanisms for limiting abuses by the other.

Paul Goodman illustrated the need for such constraints on individual initiative, in directly adopting the most common-sense and lowest-cost solutions to immediate problems, with a seemingly minor example from the New York City public school system:

> To remove a door catch that hampers the use of a lavatory requires a long appeal through headquarters, because it is 'city property.' …
>
> An old-fashioned type of hardware is specified for all new buildings, that is kept in production only for the New York school system.[14]
>
> When the social means are tied up in such complicated organizations, it becomes extraordinarily difficult and sometimes impossible to do a simple thing directly, even though the doing is common sense and would meet with universal approval, as when neither the child, nor the parent, nor the janitor, nor the principal of the school can remove the offending door catch.[15]

The problem with authority relations in a hierarchy is that, given the conflict of interest created by the presence of power, those in authority cannot *afford* to allow discretion to those in direct contact with the situation. Systematic stupidity results, of necessity, from a situation in which a bureaucratic hierarchy must develop arbitrary metrics for assessing the skills or work quality of a labor force whose actual work they know nothing about, and whose material interests militate against remedying management's ignorance.

Most of the constantly rising burden of paperwork exists to give an illusion of transparency and control to a bureaucracy that is out of touch with the actual production process. Every new layer of paperwork is added to address the perceived problem that stuff still isn't getting done the way management wants, despite the proliferation of paperwork saying everything has being done exactly according to orders. In a hierarchy, managers are forced to regulate a process which

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[14] Paul Goodman, *People or Personnel*, in *People or Personnel and Like a Conquered Province* (New York, NY: Vintage 1964, 1966) 52.
[15] Goodman 88.

is necessarily opaque to them because they are not directly engaged in it. They're forced to carry out the impossible task of developing accurate metrics to evaluate the behavior of subordinates, based on the self-reporting of people with whom they have a fundamental conflict of interest. The paperwork burden that management imposes on workers reflects an attempt to render legible a set of social relationships that by its nature must be opaque and closed to them, because they are outside of it.

Each new form is intended to remedy the heretofore imperfect self-reporting of subordinates. The need for new paperwork is predicated on the assumption that compliance must be verified because those being monitored have a fundamental conflict of interest with those making the policy, and hence cannot be trusted; but at the same time, the paperwork itself relies on their self-reporting as the main source of information. Every time new evidence is presented that this or that task isn't being performed to management's satisfaction, or this or that policy isn't being followed, despite the existing reams of paperwork, management's response is to design yet another—and equally useless—form.

Arbitrary work rules result of necessity when performance and quality metrics are not tied to direct feedback from the work process itself. They're a metric *of* work *for* someone who is neither a creator/provider nor an end user. A bureaucracy can't afford to allow its subordinates discretion to use their common sense, because in a zero-sum relationship any discretion can be abused.

IV. How Can This Irrational System Survive?

So why is this state of affairs able to continue? With all this dysfunction, how are authoritarian institutions able to survive at all, let alone function in even the most minimal manner? The answer is that, while the authority principle results in irrationality, it also shields those in authority from the negative consequences and instead forces their subordinates to bear the brunt of dealing with them. In addition, the organization itself is part of a larger, interlocking macro-system of authority that protects it from many of the negative external consequences of its authority.

Such institutions are able to survive only under special circumstances. First, they must exist in an artificially simple and stable environment. As an institution becomes larger and experiences increased overhead and bureaucratic ossification, it simultaneously becomes more and more vulnerable to fluctuating conditions in its surrounding environment, and less able to react to them. To survive, therefore, the large institution must control its surrounding environment.

In regard to the large mass-production corporation, John Kenneth Galbraith wrote, the long-time horizons for product development and the enormous up-front commitment of capital meant that a firm required a reasonable degree of predictability regarding things like wages and prices. And the outlay of capital required some reassurance—some *guarantee*—that the product would be bought in sufficient quantity to amortize the investment when it came off the assembly line.

> [Machines and sophisticated technology] require … heavy investment of capital. They are designed and guided by technically sophisticated men. They involve, also, a greatly increased lapse of time between any decision to produce and the emergence of a salable product …

The large commitment of capital and organization well in advance of result requires that there be foresight and also that all feasible steps be taken to insure that what is foreseen will transpire.[16]

[I]n addition to deciding what the consumer will want and will pay, the firm must make every feasible step to see that what it decides to produce is wanted by the consumer at a remunerative price. ... It must exercise control over what is sold. ... It must replace the market with planning.[17]

Barry Stein, a heterodox economist specializing in decentralism and economies of scale, characterized Galbraith's solution as "suppressing turbulence": "to control the changes, in kind and extent, that the society will undergo."[18]

In concrete terms, this means coordinated action at a societal level by giant corporations and the state to provide the stable environment required for the survival of the large organization. Each industry must be dominated by few enough oligopoly firms to engage in administered pricing to pass on the costs of R&D and capital investment to the consumer, without any disruption by significant competition in price. And those firms must coordinate the introduction of major technological improvements so that earlier investments can be phased out in an orderly manner without competitive disadvantage to any of the leading firms. As Paul Goodman characterized it, a handful of firms "competing with fixed prices and slowly spooned-out improvements."[19] To achieve this the state introduced regulations to create stable oligopoly markets and restrict the level of competition, pursued fiscal and monetary policies to maintain sufficient levels of aggregate demand (up to and including the creation of a permanent war economy), and even created entire new industries through its own direct investment (for example, large-scale civil aviation, and the Interstate Highway System with its attendant rebuilding of cities around car culture). In regard to the regulatory state that emerged around the turn of the twentieth century, New Left historian Gabriel Kolko described the policy objective as "political capitalism."

Political capitalism is the utilization of political outlets to attain conditions of stability, predictability, and security—to attain rationalization—in the economy. *Stability* is the elimination of internecine competition and erratic fluctuations in the economy. *Predictability* is the ability, on the basis of politically stabilized and secured means, to plan future economic action on the basis of fairly calculable expectations. By *security* I mean protection from the political attacks latent in any formally democratic political structure. I do not give to *rationalization* its frequent definition as the improvement of efficiency, output, or internal organization of a company; I mean by the term, rather, the organization of the economy and the larger political and social spheres in a manner that will allow corporations to function in a predictable and secure environment permitting reasonable profits over the long run.[20]

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[16] John Kenneth Galbraith, *The New Industrial State* (New York, NY: Signet 1967) 16.

[17] Galbraith 34-5.

[18] Barry Stein, *Size, Efficiency, and Community Enterprise* (Cambridge: Center for Community Economic Development 1974) 43.

[19] Goodman 58.

[20] Gabriel Kolko, *The Triumph of Conservatism: A Reinterpretation of American History 1900–1916* (New York, NY: Free Press 1963) 3. Original emphasis.

Beyond a certain tipping point, large hierarchical institutions become hegemonic: that is, they become the defining institutional type for society as a whole, and create entire ecology of interlocking and mutually-supporting institutions that choke out competing institutional "species." As Paul Goodman characterized it:

> [T]he genius of our centralized bureaucracies has been, as they interlock, to form a mutually accrediting establishment of decision-makers, with common interests and a common style that nullify the diversity of pluralism.[21]

> A system destroys its competitors by pre-empting the means and channels, and then proves that it is the only conceivable mode of operating.[22]

And because all the "competing" firms in an industry actually exist in an oligopoly environment with cost-plus markup and administered pricing, and all share the same pathological institutional cultures, they suffer little or no real competitive penalty for their bureaucratic irrationality.

Second, even within this protected environment they depend unofficially on the initiative of those who break the rules. Despite every effort of industrial engineers like Andrew Ure and Frederick Taylor to separate labor from skill, reserving the latter to the managerial-technical strata and transform workers into easily replaced appendages of machines, discretion cannot be entirely removed from any process. James Scott writes that it's impossible, by the nature of things, for everything entailed in the production process to be distilled, formalized or codified into a form that's legible to management.

> [T]he formal order encoded in social-engineering designs inevitably leaves out elements that are essential to their actual functioning. If the [East German] factory were forced to operate only within the confines of the roles and functions specified in the simplified design, it would quickly grind to a halt. Collectivized command economies virtually everywhere have limped along thanks to the often desperate improvisation of an informal economy wholly outside its schemata.

> Stated somewhat differently, all socially engineered systems of formal order are in fact subsystems of a larger system on which they are ultimately dependent, not to say parasitic. The subsystem relies on a variety of processes—frequently informal or antecedent—which alone it cannot create or maintain. The more schematic, thin, and simplified the formal order, the less resilient and the more vulnerable it is to disturbances outside its narrow parameters. ...

> It is, I think, a characteristic of large, formal systems of coordination that they are accompanied by what appear to be anomalies but on closer inspection turn out to be integral to that formal order. Much of this might be called 'mētis to the rescue. ...' A formal command economy ... is contingent on petty trade, bartering, and deals that are typically illegal. ... In each case, the nonconforming practice is an indispensable condition for formal order.[23]

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[21] Paul Goodman, *Like a Conquered Province*, in *People or Personnel and Like a Conquered Province* 357.

[22] Goodman, *People or Personnel* 70.

[23] Scott, *Seeing Like a State* 351–2.

In each case, the necessarily thin, schematic model of social organization and production animating the planning was inadequate as a set of instructions for creating a successful social order. By themselves, the simplified rules can never generate a functioning community, city, or economy. Formal order, to be more explicit, is always and to some considerable degree parasitic on informal processes, which the formal scheme does not recognize, without which it could not exist, and which it alone cannot create or maintain.[24]

David Graeber referred to this as "the communism of everyday life." State bureaucracies and corporations are parasitic on communistic institutions outside the cash nexus:

Every society in human history has been a foundation built out of this everyday communism of family, household, self-provisioning, gifting and sharing among friends and neighbors, etc., with a scaffolding of market exchange and hierarchies erected on top of it.

But beyond that, the parasitic institutions are internally dependent on the cooperative relationships between actual producers and creators that keeps the world running, despite their irrationality.[25]

Most production jobs involve a fair amount of distributed, job-specific knowledge, and depend on the initiative of workers to improvise, to apply skills in new ways, in the face of events which are either totally unpredictable or cannot be fully anticipated. Although—given the fact that any increase in productivity will be expropriated by management—workers generally do no more than necessary, they nevertheless have an incentive to do the minimum necessary to keep the organization staggering along and performing its ostensible mission at at least the minimal level required to keep their paychecks coming. To do this, they bend or break the rules and exercise initiative in order to get the job done and go home. This is why, despite their bureaucratic irrationality, and despite the enormous unnecessary overhead and waste, American corporations and Soviet state-planned industry were nevertheless able to churn out some non-negligible quantity of consumer goods that worked most of the time. When workers withdraw this initiative, the organization's function comes to a standstill. This is why the traditional labor direct-action tactic of working-to-rule is so devilishly effective.

V. Mene, Mene, Tekel Upharsin

This dependency of the large organization on artificial stability, and on the initiative and active cooperation of its work force, is the basis of its unsustainability.

Barry Stein argued forty years ago, in the context of his remarks above regarding large firms' dependence on suppressing uncertainty for their survival, for the superiority of a lean enterprise integrated into the local community and responding quickly to changing circumstances.

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[24] Ibid. 310.

[25] David Graeber, *Debt: The First 5,000 Years* (New York, NY: Melville House, 2011) 95.

[I]f firms could respond to local conditions, they would not need to control them. If they must control markets, then it is a reflection of their lack of ability to be adequately responsive.[26]

Consumer needs, if they are to be supplied efficiently, call increasingly for organizations that are more flexibly arranged and in more direct contact with those customers. The essence of planning, under conditions of increasing uncertainty, is to seek better ways for those who have the needs to influence or control the productive apparatus more effectively, not less.

Under conditions of rapid environmental change, implementing such planning is possible only if the "distance" between those supplied and the locus of decision-making on the part of those producing is reduced …

[The problem of large firms' vulnerability to environmental uncertainty] is to be solved not by the hope of better planning on a large scale … but by the better integration of productive enterprises with the elements of society needing that production.

Under conditions of rapid change in an affluent and complex society, the only means available for meeting differentiated and fluid needs is an array of producing units small enough to be in close contact with their customers, flexible enough to produce for their demands, and able to do so in a relatively short time …

It is a contradiction in terms to speak of the necessity for units large enough to control their environment, but producing products which in fact no one may want![27]

Of course, Galbraith's unstated assumption—in contrast to Stein's—was that the survival of the mass-production corporation was an end in itself, and the surrounding society and people in it were all means to be subordinated to that end. He assumed likewise, on very questionable grounds, that the large, capital-intensive mass-production firm was technologically necessary to produce the kinds of goods and services consumers desired. Stein denied this.

As to the problem of planning—large firms are said to be needed here because the requirements of sophisticated technology and increasingly specialized knowledge call for long lead times to develop, design, and produce products. Firms must therefore have enough control over the market to assure that the demand needed to justify that time-consuming and costly investment will exist. This argument rests on a foundation of sand; first, because the needs of society should precede, not follow, decisions about what to produce, and second, because the data do not substantiate the need for large production organizations except in rare and unusual instances, like space flight. On the contrary, planning for social needs requires organizations and decision-making capabilities in which the feedback and interplay between productive enterprises and the market in question is accurate and timely—conditions more consistent with smaller organizations than large ones.[28]

[26] Stein, *Size, Efficiency, and Community Enterprise* 4.
[27] Ibid. 44.
[28] Ibid. 58.

Almost ninety years ago, Ralph Borsodi argued (in *The Distribution Age*) that craft production with cheap, electrically powered general-purpose tools near the point of consumption was more efficient than mass production with expensive product-specific machinery, when the added costs of batch-and-queue production, long-distance distribution and marketing were taken into account. In fact, advocates of industrial decentralization (e.g. Pyotr Kropotkin in *Fields, Factories and Workshops*) had been arguing the same thing since the start of the Second Industrial Revolution.

The problem was that the state's subsidies and protections were sufficient to compensate for the inherent inefficiency of large-scale production, so that the potential of decentralized community manufacturing was coopted and enclosed within the preexisting framework of dark satanic mills.

But in any case, continuing technological advances have reduced the necessary capital outlays for manufacturing by additional orders of magnitude since then, and at the same time exacerbated the crisis tendencies of corporate capitalism. The development of a generation of much smaller and cheaper CNC (computer numerical control) tools led to the rise of distributed cooperative micro-manufacturing on the Emilia Romagna/Bologna model in the 1970s, and Chinese job-shop production in the 1980s and 1990s. And the open hardware and maker movements have taken it even further, scaling high-quality production down to tabletop machinery in neighborhood garage factories.

At the same time, the imploding money cost of capital investment for industrial production is exacerbating capitalism's chronic crisis tendencies towards insufficient profitable investment outlets to absorb all the propertied classes' idle capital. It takes greater and greater levels of state intervention to absorb surplus capital and guarantee consumption of industrial output, driving government towards larger chronic deficits, in the process described by James O'Connor in *Fiscal Crisis of the State*. Eventually industry's need for state intervention exceeds the state's resources.

And as technological change destroys the capital-intensiveness of production, it undermines the material basis for large organizational scale and hierarchy. The factory system and wage system originally came about because of the Industrial Revolution's technological shift from affordable craft tools owned by individual workers or small groups to expensive machinery that could only be purchased by groups of rich capitalists who then hired wage laborers to work their machinery. We're now seeing a shift back to a much higher-tech form of craft production, with computer-controlled general-purpose craft tools that small groups of workers can afford. This raises the threat of skilled labor with cheap high-tech tools simply seceding from the economy and undertaking direct production for use.

To counter this threat, capital and other concentrations of power are increasingly shifting away from a model of surplus extraction based on physical control of the means of production, and instead relying on artificial legal barriers controlling the circumstances under which people are allowed to produce even using their own means of production. In the informational and cultural realm this refers, obviously, to the use of copyright to prevent use of the desktop computer as a craft tool for software design, publishing and music production in competition with the old gatekeeping corporations. In the physical realm it means using zoning laws and safety codes to prevent the use of spare capacity in ordinary household goods in home-based micro-breweries or micro-bakeries, cooperative neighborhood childcare and eldercare arrangements, etc. In services it means the use of taxicab medallions or proprietary, walled-garden corporate apps like Uber to suppress cooperative ride-sharing services. And in manufacturing, it means the use of

proprietary digital designs and patent law to suppress competition from neighborhood garage factories.

But the same technological advances that are rendering the large organization obsolete for production are also rendering the artificial legal barriers unenforceable. In the information sector, what file-sharing has done to the movie and music industries is common knowledge, even in the face of draconian legislation like the Digital Millennium Copyright Act and questionably legal enforcement efforts shutting down websites wholesale via civil forfeiture.

In manufacturing, patent enforcement in the mass-production age depended on the low transaction costs prevailing when a handful of oligopoly corporations produced a small number of designs for sale in a handful of national retail chains. In an environment of hundreds of thousands of garage factories producing stuff for neighborhood use with pirated CAD/CAM (computer-aided design and manufacturing) files, the costs of enforcement are insurmountable.[29]

And simultaneously with this process of cheapening means of production, "human capital"—the social relationships and skills of the producing classes—has surpassed physical capital as the primary source of value and productivity. This human capital increasingly extends outside the workplace, the basis of what autonomist Marxists like Toni Negri and Nick Dyer-Witheford call the "social factory." So our human relationships are becoming the most important means of production at the same time as even the physical means of production are becoming amenable to ownership and control by small cooperative groups. This sets the stage for what Negri and Michael Hardt, in *Multitude* and *Commonwealth*, call "exodus"—simply taking our productive relationships and tools and seceding from capitalism.[30]

VI. Conclusion: The Superiority of Self-Organization

For every one of the enumerated inefficiencies of hierarchy above, there is a corresponding efficiency of self-organized and self-managed institutions. Where authoritarian institutions render the intelligence of their members less usable, their libertarian counterparts render their members' intelligence *more* so. If conflicts of interest render hierarchical organizations opaque to their leadership despite futile efforts at panoptic surveillance, self-organized and self-managed work within horizontal institutions is fully legible to all who participate in it. To quote Michel Bauwens of the Foundation for Peer-to-Peer Alternatives:

> The capacity to cooperate is verified in the process of cooperation itself. Thus, projects are open to all comers provided they have the necessary skills to contribute to a project. These skills are verified, and communally validated, in the process of production itself. This is apparent in open publishing projects such as citizen journalism: anyone can post and anyone can verify the veracity of the articles. Reputation systems are used for communal validation. The filtering is a posteriori, not a priori. Anti-credentialism is therefore to be contrasted to traditional peer review, where credentials are an essential prerequisite to participate.

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[29] The above material is a brief summary of the argument of my book *The Homebrew Industrial Revolution: A Low-Overhead Manifesto* (np: BookSurge 2010).

[30] Antonio Negri and Michael Hardt, *Commonwealth* (Cambridge, MA: Belknap Press of Harvard University Press 2009) 152.

P2P projects are characterized by holoptism. Holoptism is the implied capacity and design of peer to [peer] processes that allows participants free access to all the information about the other participants; not in terms of privacy, but in terms of their existence and contributions (i.e. horizontal information) and access to the aims, metrics and documentation of the project as a whole (i.e. the vertical dimension). This can be contrasted to the panoptism which is characteristic of hierarchical projects: processes are designed to reserve 'total' knowledge for an elite, while participants only have access on a 'need to know' basis. However, with P2P projects, communication is not top-down and based on strictly defined reporting rules, but feedback is systemic, integrated in the protocol of the cooperative system.[31]

In a prison—governed by panopticism—the warden can see all the prisoners, but the prisoners can't see each other. The reason is so the prisoners can't coordinate their actions independently of the warden. Holopticism is the exact opposite: the members of a group are horizontally legible to one another, and can coordinate their actions. And "everyone has a sense of the emerging whole, and can adjust their actions for the greatest fit."[32]

The unspoken assumption is that a hierarchy exists for the purposes of the management, and a holoptic association exists for the purposes of its members. The people at the top of a hierarchical pyramid can't trust the people doing the job because their interests are diametrically opposed. It's safe to trust one another in a horizontal organization because a common interest in the task can be inferred from participation.

If the authoritarian institution is characterized by one-way communication, the libertarian one is characterized by two-way communication among equals, enabling the kind of constant feedback process necessary to adjust action rationally to its results.

Much of what conservatives frame as negative tendencies of "human nature" is actually the result of coercive intervention to prevent direct communications between human beings, because exploitation depends on keeping the exploited classes divided among themselves. It's telling that the zero-sum results of Prisoner's Dilemma gaming, and the pathological behavior elicited in the Milgram Experiment, both depended on isolating each individual subject under the panoptic supervision of those in authority, and prohibiting any authentic direct communication.

If the exploitative purposes of the authoritarian organization create conflicts of interest between superiors and subordinates, so that those most familiar with the situation cannot be trusted to use their own judgment, the libertarian organization—because it exists only for the purposes of its members—can trust the full use of individual initiative and self-direction. Such organizations are frequently characterized by modular or stigmergic coordination, with a high degree of self-direction and the self-selection of tasks.

Self-managed and user-owned organizations have always had these significant advantages over authoritarian hierarchies. But stigmergically organized activity on the commons-based peer production model, which came about in response to the possibilities offered by networked communications in the Internet era, takes the advantage an order of magnitude further. Stigmergic projects like Wikipedia or free and open-source software design require far less, if any, coordi-

[31] Michel Bauwens, "The Political Economy of Peer Production," Ctheory.net, December 1, 2005, www.ctheory.net/articles.aspx?id=499.

[32] Alan Rosenblith, "Holopticism," March 5, 2010, www.slideshare.net/AlanRosenblith/holopticism.

nation than more traditional forms of consensus-based management like those in cooperative enterprises.

"Stigmergy" is a term coined by biologist Pierre-Paul Grasse in the 1950s to describe the process by which social insects like termites coordinate their efforts through the independent responses of individuals to environmental triggers like chemical markers, without any recourse to a central coordinating authority.[33] The term was carried over to the social sciences to describe networked forms of organization associated like wikis, group blogs and "leaderless" organizations with networked cell architectures. Yochai Benkler uses software development to illustrate the permissionless nature of stigmergic organization.

> Imagine that one person, or a small group of friends, wants a utility. It could be a text editor, photo-retouching software, or an operating system. The person or small group starts by developing a part of this project, up to a point where the whole utility—if it is simple enough—or some important part of it, is functional, though it might have much room for improvement. At this point, the person makes the program freely available to others, with its source code … When others begin to use it, they may find bugs, or related utilities that they want to add. … The person who has found the bug … may or may not be the best person in the world to actually write the software fix. Nevertheless, he reports the bug … in an Internet forum of users of the software. That person, or someone else, then thinks that they have a way of tweaking the software to fix the bug or add the new utility. They then do so, just as the first person did, and release a new version of the software with the fix or the added utility. The result is a collaboration between three people—the first author, who wrote the initial software; the second person, who identified a problem or shortcoming; and the third person, who fixed it. This collaboration is not managed by anyone who organizes the three, but is instead the outcome of them all reading the same Internet-based forum and using the same software, which is released under an open, rather than proprietary, license. This enables some of its users to identify problems without asking anyone's permission and without engaging in any transactions.[34]

Because networked or stigmergic organization is permissionless and highly granular, it is capable of aggregating many small contributions without significant transaction costs—unlike projects organized by traditional hierarchical means, which require everyone to be on the same page before anyone can do anything. For example, a traditional encyclopedia like *Britannica* cannot be published until the directors of the project have determined what articles will be included, and contracted out the writing of each article to some scholar or other. It's an all-or-nothing project. In contrast, anyone can note the lack of any Wikipedia article on some topic they consider important, and immediately write a stub for it. Anyone else with knowledge of that topic, or some sub-field of it, who stumbles across the stub can contribute a sentence, a paragraph, or one or more sections. If the hierarchical institution is less than the sum of its parts, the stigmergic organization is more.

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[33] Mark Elliott, "Stigmergic Collaboration: The Evolution of Group Work," *M/C Journal*, May 2006, http://journal.media-culture.org.au/0605/03-elliott.php.

[34] Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven, CT: Yale UP 2006) 66–7.

Also, because they are permissionless, and can act without submitting proposals for central approval, they are also better at reacting to the surrounding environment than hierarchies. Any innovation developed by a single member or cell in the network immediately becomes part of the available toolkit for the entire network, which any member can apply in circumstances they consider appropriate.

To use a term from military theorist John Boyd, networks go through the OODA process—Observe, Orient, Decide, Act—much faster than hierarchies.[35] They "get inside the OODA loop" of hierarchies—they act faster, and force the hierarchical institutions to react to them. They innovate, act, evaluate the results, and innovate and act again, with much faster iteration cycles than the hierarchies arrayed against them. As a result, networked insurgencies can go through multiple generations of tactical innovation with the speed of replicating yeast while hierarchies like the Transport Security Administration or the music industry are still fighting the last war, ponderously formulating a response to first-generation practices. It's the *speed* with which networks go through generational innovation, enabled by their permissionlessness, that is the key; they may fail much of the time, but they fail faster.

> [T]he primary determinant to winning dogfights was not observing, orienting, planning, or acting better. The primary determinant to winning dogfights was observing, orienting, planning, and acting *faster*. In other words, how quickly one could iterate. *Speed of iteration*, Boyd suggested, beats *quality of iteration*.[36]

OODA loops lengthen or shorten mainly as informational friction increases or decreases between each step in the OODA process. At one end of the spectrum the actor is empowered to directly implement changes in actions based on their own observation of the results of previous action. As barriers are erected between the different sub-processes of the OODA loop—like policy-making procedures within a hierarchy—and feedback is hindered, information-processing and reaction time will slow down.

Since the rise of agriculture and the subsequent development of ruling classes to feed off surplus production, there has been a millennia-long arms race between the productivity created by human initiative and cooperation, and the various methods developed to enclose this productivity for the extraction of rent by temple priesthoods, latifundia owners, feudal landlords, capitalists and state bureaucrats. Sometimes—e.g. fourteenth-century Europe, with the fixing of customary rents and the near-independence of the free towns—the forces of productivity have gained the advantage. At others—like the "long sixteenth century" during which the new absolute states conquered the towns and landed oligarchs abrogated customary peasant land rights, rack-rented and evicted them, and enclosed the open fields for pasturage—the forces of enclosure and extraction came out ahead. With the rise of cheap micro-manufacturing tools, intensive horticulture techniques and networked communications, we are approaching the takeoff point at which the productivity of cooperative labor achieves permanent victory over the forces of enclosure. Post-scarcity technologies are growing in productivity faster than rentiers can enclose them. Post-capitalist transition is the end of humanity's childhood.

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[35] Col. John R. Boyd, USAF. "Patterns of Conflict," presentation (December 1986), www.ausairpower.net/JRB/poc.pdf, 5–7.

[36] Jeff Atwood, "Boyd's Law of Iteration," Coding Horror, February 7, 2007, www.codinghorror.com/blog/2007/02/boyds-law-of-iteration.html. Original emphasis.

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