

Eusociality, Society and Psychopaths

Bruce L. Gary, 2017.08.20; 2017.08.24

A person with cancer, and a society that tolerates psychopaths, have the same ending: death. In both cases a fault at a lower level of organization undermines performance and survival at the higher level. The immune system does an amazing job of identifying and disposing of cancer cells. A civilized society, however, was so dependent on the embrace of tolerance that was necessary for the coalescence of tribes to super-tribes, and eventually civilization, that the culture of a civilization is incapable of the requisite intolerance of psychopaths for the civilization's survival. Psychopaths pose the same threat to a civilizations that cancer cells pose to the multi-cellular organism. Sometimes the prerequisite force for a successful rise is ironically also the force that leads to collapse.

An adult human consists of about 30 trillion cells. Each day approximately a million undergo mutation and lose their usefulness to the organism. This may sound like a lot of cells, but this mutation rate is a mere one per 10 million; the rest continue to function normally. What's the problem with a million cells that cease to function; after all, the other 99.99999 % of cells are still functioning. A non-functioning cell is "in the way" of those that are functioning. Also, among the million per day that mutate, a small fraction are "pre-cancerous." The percentage is < 1 % of the mutations, and may number 1000 to 5000 per day. Imagine that: every day in a typical body there appear at least 1000 pre-cancerous cells.

Immune System

It's the job of the immune system to identify the mutated cells and mark them for programmed death (apoptosis). It's the killer T cells of the immune system that do this marking, and because of them almost all of the mutated cells, including the pre-cancerous ones, disassemble themselves and disappear. If the pre-cancerous cells weren't dealt with in this way some of them would eventually become cancerous. Even then, killer T cells will usually identify them in this new state and mark them for death. If a cancerous cell escapes detection it may feed itself by altering the growth of nearby capillaries, which will increase the blood flow to the cell (angiogenesis), and this provides abundant food for cell growth and multiplication, i.e., the formation of a tumor. A cancer cell behaves as if its destiny is more important than that of the body that created it. If the cancer cell could think we would accuse it of being short-sighted, for it is on a path that will lead to its proliferation for only a limited time, because when the body dies, so does the cancer cell line.

What a marvelous mechanism the human body is! I've existed for over 78 years, and I had no idea that these things were happening. I owe my good health at an advanced age to things that were occurring without my awareness.

Cell Specialization (Methylation) and Organs

Whereas each cell in a body has the same genetics as every other cell, most of every cell's DNA is covered by a molecular sheath ("DNA methylation"). The part that's not covered is active in a process that assembles protein molecules. A kidney cell will produce proteins that cause a kidney to perform kidney duties. It's the same for every cell in every organ. This, too, is an amazing mechanism!

Every multi-cellular organism has to evolve a mechanism for assigning cells to tasks that are appropriate for their location. When this is accomplished, the cells are behaving in ways that promote the survival of the individual organism. Every cell has an ancestry that goes back to single-cell life, before multi-cellular organisms existed. Some of the DNA in our cells come from that time, possibly with modifications. When cells lived single lives they served only the cell, their single cell existence. The transition from a single-cell lifestyle to a multi-cellular lifestyle required the addition of DNA that changed the cell's behavior from serving itself to serving a collection of cells, the multi-cellular organism. This is such an important transition that it should have a name. Maybe it does, and I'm not familiar with biology sufficiently to know the name; but I want to refer to the transition as "eu-connectedness" - meaning promoting the welfare of a connected group. (There's a reason I've chosen this name, as will become apparent.)

The Origins of Eu-Connectedness

It is interesting to speculate on how eu-connecteness might have originated. There must have been first occasions of single cells dividing but sticking together instead of separating and going their separate ways within the ocean, or pond. Such a stuck-together pair of identical cells might have been less vulnerable to predation by genetically different predator cells. If

sticking together had some such advantage, then a genetic predisposition for it would have evolved; this would have led to the appearance of cells that were genetically identical and genetically-driven to stick together. A new mutation could then have changed the properties of the outer layer of cells, affording additional protection from predators. This would have entailed the invention of DNA methylation, or the covering of DNA strands so that only some of the DNA was uncovered and active in producing proteins that defined the cell's properties. This may be how "organs" originated, and how a multi-cellular organism evolved.

Notice that all the cells in a multi-celled organism have a shared fate. This is an important precondition for other things to happen, as any game theorist would recognize. Cells in a body are rewarded by the success of the body, and the only measure for any such cell is how well it contributes to the body's performance. This is such a simple-sounding statement, but it hides unseen subtleties. For example, if a cell is a liability to the body, because it is under-performing its assigned function for whatever reason (injury, mutation, etc), the cell's most important contribution to the body is to self-destruct! A cell may not be in the best position to know if it's a liability, so that's the job of the immune system's killer T cells. These immune cells scour the body for under-performing cells that need to be marked for self-destruction in order to maintain the body's performance.

Dealing With Cancer Cells

There's one other cell type that needs to be marked for self-destruction: a cancer cell! Such a cell behaves in a way that doesn't have the body's welfare "in mind." It's as if the cell becomes oblivious to the body's needs and reverts to an ancestral behavior of self-serving behavior. If such a cell is able to multiply and start to form a tumor, it may stimulate "angiogenesis" and steal resources meant for other cells, those still functioning on behalf of the body. A cancer cell has no pre-vision of its future demise, when the body eventually dies due to uncontrolled metastasis of cancer cells; it just does what it does because a mutation programs it to change its allegiance from the organism to itself.

It is amazing that a body of 30 trillion cells can be kept free of runaway cancer when every day 1000 to 5000 cells mutate to a pre-cancerous state. The immune system's killer T cells are amazing!

Hierarchy of Organization and Changed Commitments

A game theorist will naturally wonder if every coming together of elements to form something new, with a shared fate, will be subject to the same challenges as the evolution of multi-cellular organisms. Consider that a group of individual organisms is another level in the hierarchy of life. In theory, there might be an analogous relationship between a flock of birds to an individual bird as the relationship between a bird's body and the cells that constitute that body. Or consider a bee hive and the individual bees that the hive is composed of.

The key trait that needs to be taken into account is "shared fate." If the flock of birds is dispersed by some external intervention the birds may continue to live and prosper without ever coming together again as a flock. Their existence does not have a shared fate. Bees, on the other hand, have a shared fate! A single bee cannot live long without the hive. A hive either survives, or it dies, and all bees share in the fate of the hive. The term "eusocial" was introduced in 1956 by Suzanne Batra, and popularized by a book, *The Social Conquest of the Earth*, by Edward O. Wilson in 2012. Eusociality is a name for the process that conquers the selfish perspective of an individual and converts individual behavior to group-serving, and thus allows a species to live or die in groups.

Eusociality

A eusocial species consists of individuals that behave in ways that serve the group of individuals, such as a bee hive, an ant colony, a colony of termites that build a mound, or a tribe of humans. Since the group of individuals of a eusocial species has a shared fate, it is essential that the individuals behave in ways that contribute to the group's survival, even when it requires an occasional act of self-sacrifice. This is equivalent to "genetic enslavement" to the group.

Thus, a tribesman is to his tribe as a cell is to the tribesman. Only those tribes prosper that consist of loyal tribesmen. As E. O. Wilson pints out, the eusocial insect species achieved their dominant position in the world after tens of millions of years of evolution, whereas humans have been on the eusocial path for a much shorter time, such as a mere 1/4 million years. A couple thousand generations hasn't been sufficient to produce a complete transition to eusociality, but apparently a 90%

incidence of eusocial individuals (as explained below) has been enough to propel humans to Masters of the Planet. Thus, most humans instinctively understand the concepts of teamwork, patriotism, and "my tribe, right or wrong."

Division of Labor

Analogies abound between the transition from cells to a multi-cellular organism and those few species that transitioned from individual organisms to a eusocial society. Just as a body consists of many cells with identical DNA but with different exposure for protein production needed to form organs, a species with a eusocial organization has a "division of labor" among individuals. This is just one example of the individual allowing itself to be enslaved to the group's agenda. The human species has the most diverse division of labor arrangements of any species. Among bees, some are "workers," and they forsake reproduction tasks; some humans are professional scientists, and they have fewer children than the *hoi poloi* with no special skills. Everyone in a human society is expected to be patriotic, which is to say that every individual person should be willing to become a warrior when the tribe is threatened. Many more examples of how humans adopt specialized positions in the group's labor needs could be given, but it's not necessary to elaborate on this here.

Tribal Intolerance

Every tribal society has the analog of an immune system. These are people who enforce "conformance" with tribal beliefs, rituals and behavior. Differences are instinctively not tolerated, and shunning, banishment or murder are available options when an individual will not perform on behalf of the group. Self-appointed enforcers of conformance are found in every human society, especially in primitive societies (e.g., those in the Middle East). For almost two centuries academics have used the term "tribal mentality." It refers to the fact that every tribesman is willing to help fellow tribesmen, but hates and wants to kill tribesmen from neighboring tribes. A shorthand phrase captures this: intra-tribal amity, extra-tribal enmity. Or, we tolerate cooperating fellow tribesmen but cannot tolerate any other tribe's men.

Super-Tribes

Every 100,000 years, approximately, the climate at mid-latitudes undergoes a warm spell, lasting about 10,000 years. We're in one of these "inter-glacials" now, and it started ~ 10,000 years ago. This climate change led to more abundant food, both animal and vegetable. A tribe could shrink its territory without losing population, or it could coalesce with neighboring tribes to be assured of dominance over tribes that didn't join to form a super-tribe. Coalescence must have been risky, because for millions of years humans evolved to hate individuals from a neighboring tribe. The first one to try this experiment may have reaped rewards, which other tribes noticed. Those with natures that could, probably did; and those that just couldn't, didn't.

The larger the tribe, the more important division of labor became. And the more job niches a tribe could sustain, the more powerful the tribe was. Each group of people performing a "job type" had a relationship to the super-tribe that is analogous to an organ's relationship to the body. A similar analogy would be that those individuals who worked together to perform a job that the super-tribe needed done were analogous to a group of cells that form an organ. A super-tribe needs many such "organs."

Psychopaths

If an organism has cells that "go rogue" (i.e., cancer cells, which threaten the organism with eventual death), is there something analogous for the super-tribe that is composed of individuals devoted to tribal prosperity? Yes, these people have a name: psychopath. A psychopath is perfectly analogous to a cancer cell, because it not only doesn't perform the duties required of him but he steals resources from the other individuals in the tribe and behaves in ways that serve only the psychopath, at the expense of the tribe.

The anthropology literature suggests how the occasional psychopath was dealt with in a hunter/gatherer tribe: ambush murder. Presumably, this kept the incidence of psychopaths low in primitive tribes.\

Sociopaths

The literature on the distinction between psychopathology and sociopathology is conflicting, so I have adopted the following

definitions: a psychopath scores 30 or above on the Hare Psychopathy Checklist (this is a widely used definition) whereas a sociopath scores between 15 and 29 on that test. Another term for sociopaths is "Borderline Personality Disorder" (BPD). In America 4 % of the population are psychopaths and 6% are sociopaths.

Sociopaths are a liability to the tribe, but psychopaths are a greater liability. Together, the two categories constitute 10% of the American population. It is reasonable to assume that genetics is a major determiner of sociopathy and psychopathy, with the sociopath merely having fewer of the genes that produce a psychopath. As a first approximation, we may assume that 10% of Europeans belong to the sociopath/psychopath categories.

Super-Tribes Reward Sociopaths and Psychopaths

In a small tribe, smaller than the Dunbar Number (~ 150 adults), there are a sufficient number of interactions between individuals so that every person is a known person to everyone else. If a person can't be trusted, or has insufficient evidence of patriotism, he is either shunned, banished or killed. This is "the tribal immune system" at work!

In a super-tribe many people encountered in public may be strangers, so interactions with them don't have the benefit of the small tribe knowledge of the stranger's reputation. This is an opportunity for sociopaths and psychopaths to "game the tribe" by cheating tribesmen, then moving to somewhere else in the super-tribe where they can repeat their cheating behavior with new strangers. On theoretical grounds we should expect that during the past 10,000 years the incidence of sociopaths and psychopaths has increased. The present rate of 10% for both categories might have been as low as 1%, for example, before super-tribes existed.

Hyper Tolerance

The combining of two tribes must have generated tremendous resistance by tribesmen of both tribes, given that for millions of years evolution rewarded hatred of strangers. The tribal leaders may have understood the rewards of overcoming this instinctive intolerance of strangers. Evolution works on the principle that no two things are equal, so each tribe has a different ability for overcoming intolerance. Two more-than-average tolerant tribes are more likely to successfully coalesce than any other two tribes. Since a super-tribe could more easily dominate smaller tribes, evolution during the last 10,000 years must have rewarded tolerance.

Today, the most tolerant societies are located at the northernmost latitudes, in Scandinavia. This is also the region where the most dramatic improvement in carrying capacity occurred when the Holocene Epoch began 10,000 years ago. At equatorial latitudes, on the other hand, the climate didn't change much. Therefore, the greatest reward for tribal coalescence, requiring tolerant acceptance of different tribesmen into a super-tribe, would have been in Europe, and especially Scandinavia. If an excess of tolerance is to be found anywhere, it would be in Scandinavia.

The Dangers of Hyper-Tolerance

In a small tribe the "tribal immune system" required intolerance for non-conformance and intolerance for lack of patriotism. The tribal immune system also identified disruptive psychopaths and sociopaths and marked them for shunning, banishment or murder. What might be the danger of a super-tribe that enforces a new tolerance of differences in order to maintain tribal harmony during and after tribal coalescence? The danger is that sociopaths and psychopaths will be tolerated more than is good for tribal strength.

A super-tribe that encourages tolerance in excess, allowing sociopaths and psychopaths to prosper, can be described as "hyper-tolerant." Such a tribe will have an ineffective "tribal immune system" for it will overlook the presence of individuals who are the analogs of a cancer cell that threatens to destroy a body.

It is ironic that the very thing that allows for the creation of a civilization is the same thing that dooms it to eventual collapse.

Political Correctness

Another name for "hyper-tolerance" is "political correctness," or PC. College campuses have become centers for PC run amok. The students, and some faculty, are afraid of ideas. They embody the attitude that was necessary at the time of tribal coalescence. "Don't criticize anybody, regardless of how different they look, believe or act."

Of course, there's the opposite of PC that can be extreme. Referring to the immune system analogy again, when the immune system is over-active it can produce auto-immune diseases, such as lupus, rheumatoid arthritis and multiple sclerosis. When a tribal immune system is over-active, it can produce Nazi Germany.

So What's the Problem?

Let's review some of the foregoing.

The biological immune system has had ~ 1/2 billion years of evolution to perfect it's ability to identify non-functioning cells as well as cancerous cells, and rid the body of them. It is therefore not surprising that it does an amazing job with trillions of cells that need to be monitored, and identifying millions per day that need to be destroyed.

For species in which individuals come together for mutual enslavement in the service of the group, or tribe, a "tribal immune system" is needed. A species of this type is referred to as a eusocial species. We humans are eusocial, and for most of the million years or so of our ancestry as a eusocial species the tribal immune system has had a mere 100 or 200 individuals to monitor, and keep enslaved. The individuals of each tribe perform the function of the tribal immune system. Tribal monitoring consists of enforcing conformance of beliefs, rituals and social behavior. Freeloaders are identified for the application of social pressure, and sociopaths are identified for shunning, banishment and murder. For as long as tribes were small the tribal immune system evolved into an evermore effective system for maintaining tribal viability.

During the recent Holocene inter-glacial warming, starting 10,000 years ago, tribal coalescence occurred for the first time. Instinctive intolerance of strangers had to be suspended in order for the combining of tribes to occur. A new structure for super-tribe immune system was needed, and it demanded a different balance between tolerance and intolerance. Since the timescale for super-tribes is on the order of a few centuries, from inception to collapse, there have been too few societies of super-tribes for evolution to have found a solution to the new super-tribal immune system needs. Some super-tribes have created a society that is sufficiently advanced that it qualifies as a civilization. So what's needed, but hasn't evolved yet, is a "civilization immune system." The present is usually based on what worked in the past, so it is natural that "civilization immune systems" tend to swing back-and-forth within a range set by the extremes of hyper-tolerance and over-active intolerance.

During the Holocene there probably has been a rise in the incidence of sociopaths, and their extreme version, the psychopath. The "civilization immune system" is supposed to be identifying these "cancerous" individuals, and subjecting them to shunning, banishment and murder - but so far no solution has been found that accomplishes this. Every generation of a civilization faces increased need to preserve itself from the disrupting effects of sociopaths and psychopaths, yet every generation fails in this task.

The present Western Civilization is still groping for a balance, and our "civilization immune system" shows signs of faltering. The wild swings between hyper-tolerance and over-active intolerance for societies that comprise Western Civilization suggest that our civilization may be poised for an irreversible collapse.

That's the problem!

Over-Active Intolerance Episodes

A naive hope is that swings to "over-active intolerance" would purge some of the psychopaths from society. It is therefore ironic that when at times of over-active intolerance, it is the psychopaths who are in control! Their influence, therefore, and possibly their numbers, might actually increase at these times! Nazi Germany is a prime exhibit of this. America is currently led by a psychopath, and he is emboldening his psychopath comrades to show their faces. The other swings, those to "hyper-tolerance," are equally ineffective at removing psychopaths.

The sad truth of our situation is that the "civilization immune systems" is totally incapable of curing the cancer that is firmly embedded in civilization, and is rising in influence in a way that threatens eventual collapse. Psychopaths and sociopaths are a cancer upon civilization, and the patient's prognosis is grim!

How do Psychopaths Threaten Civilization?

An entire book could be written about how psychopaths and sociopaths affect the world? Some could argue that "yes, psychopaths steal from others, but they also are CEOs of large, international corporations - so surely they are contributing to civilized life." Then there would be a counter-argument "Exxon Mobile has manipulated public opinion to diminish concern about global warming, and has therefore contributed to the threats of uncoltralled global warming." I'm not going to write the book here, but I simply invite you to watch the evening news and keep track of how many of the bad news items are due to psychopaths.

What Must be Done

It's easy to prescribe a solution, and in this case the solution is completely unfeasible. All psychopaths should be shunned, sterilized, jailed or killed, and all sociopaths should be shunned, sterilized or jailed. I believe that this is the only answer to the plaintive question "What shall we do to be saved?"

My prescription is unwelcome during times of hyper-tolerance, clearly, as well as times of over-active intolerance. There is no social setting that would give consideration to my solution. I therefore believe that our civilization is destined to collapse, after which humanity shall enter a New Dark Age - from which it may never return.

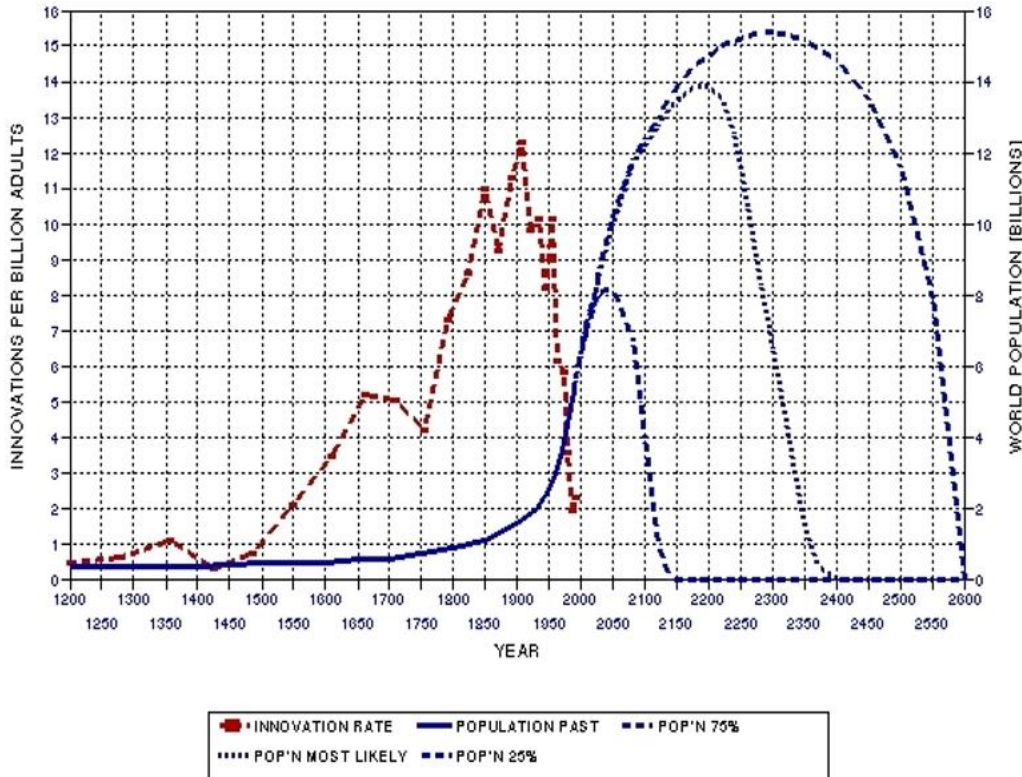
The only gleam of hope is for colonizing Mars, or an asteroid, with a "No Psychopaths Welcome" sign. But even that solution is fragile, because psychopathology is mostly genetic, so the new colony would have to continually cleanse itself of psychopaths. People are simply too timid to take control of their destiny in the ways required for long-term survival of a civilized state.

Humanity's Future

I have written extensively (Gary, 2014) about the insurmountable challenges facing humanity. The threats include mutational load, cultural regression, pandemics, world population explosion, exhaustion of resources, mass migrations, global warming, etc. These threats are mere suggestions of what will weaken human civilization, and lead to a New Dark Age.

I have argued that aside from these specific threats, humanity (as we know it) is likely to disappear in two or three centuries. The argument is based on Sampling Theory. Briefly, there's a 50% probability that we are living at a time that is between the 25th and 75th percentiles of the entire sequence all human lives. Since 60 billion humans have already been born, for us today to be at the 25th and 75th percentiles we can calculate that the total number of humans that will ever exist would be 240 billion (25th percentile) and 80 billion (75th percentile). Plausible world population scenarios achieve these two total lives lived in the years 2100 and 2500 AD. In other words, there's a 50% probability that humanity will disappear during the 4 century interval 2100 to 2500 AD. Another calculation can be made for the 50th percentile, and that date is 2300 AD. In other words, there's a 50% probability that humanity will disappear before 2300 AD.

WORLD POPULATION PROJECTIONS
SCENARIOS INCLUDING 50% PROBABILITY



World population crash scenarios (dashed blue traces) for 25, 50 and 75 % probability. (Ignore the dashed red trace.)
From the book *Genetic Enslavement*, Bruce Gary (2014), Chapter 29.

In Conclusion

Humanity's "high noon" might have been the second half of the 20th Century. I keep remembering 1969, when humans walked on the moon for the first and only time. How lucky I've been to have lived through these best of times. Humans have so much potential, and it saddens me profoundly to think about the demise of our species.

A Few Quotes

"Good news, oh beautiful planet, the accursed race of Man is not immortal." Robinson Jeffers, ca. 1925.

"Such ... is the world which Science presents for our belief. ... That man is the product of causes which had no prevision of the end they were achieving; that his origin, his growth, his hopes and fears, his loves and his beliefs, are but the outcome of accidental collocations of atoms; ... all the noonday brightness of human genius are destined to extinction in the vast death of the solar system, and ... the whole temple of man's achievement must inevitably be buried beneath the debris of a universe in ruins..." Bertrand Russell, "A Free Man's Worship," 1903.

"The 'call of the wild' can be heard by people too. For some, there's a longing for a lost tribal lifestyle, which civilization is smothering. These people secretly hope for civilization's decline and fall. Everything a civilized person cherishes is at risk, so let us have gratitude while we can." Bruce Gary, *Quotes for Misanthropes*, 2016.

"To me, at least, this is no dream, but a possibility to be lost or won by men, as they may have or may not have the greatness of heart to consciously shape their moral conceptions and their lives to such an end." H. G. Wells, commenting on the possibility of humanity finding a winning place that overcomes our inherited primitive nature, "Human Evolution, An Artificial Process," *Fortnightly Review*, Oct. 1896.

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Related Links

[Futility](#) (nothing can improve the prospects for human survival)

[Sociopaths Doom Civilization #1](#) (another attempt to sound an alarm)

[The Mis-Measure of Men](#) (an illustration of how humanity today is a product of the mis-measure of men)

[Roobification of America](#) (about Jose Ortega y Gasset, Roger Price and my follow-up)

[Holocene Experiment](#) (understanding Global Terrorism)

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LA Times Series "[Our Dishonest President: #1](#)"

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Roobs in Trumpistan! ("Carnival in Rome," a painting by Johannes Lingelbach, c1650, depicting "fools" mocking the elite and celebrating vulgarity, as only the hoi poloi know how.)

