No cops in the lecture hall: cheating and what (not) to do about it

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Who we are, who we aren't, and who this is for

We are academic mathematicians with both teaching and research responsibilities. We are also both members of the Just Mathematics Collective (JMC), and we hope this will be the first of several essays (some of which may be coauthored with other JMC members) focused on the liberatory potential of mathematics. We are not experts in pedagogy or education, nor are we professional historians or political theorists. We have extensive experience learning, doing, communicating, and teaching mathematics.

We don't have any special expertise on the academic literature of cheating. We are not trying to get this piece published in any sort of conventional way and we are writing with pseudonyms. We don't claim that these arguments are new or original. We don't possess the ideas; we just think they deserve to be circulated and articulated in the context of mathematics.

So this is not the place to look for an extended bibliography. We do include some citations when we think they're helpful and when we happen to know about them. A central theme of what we hope will eventually be a collection of essays is that the barrier of entry for political engagement in academia is far too high. No one should need a PhD level knowledge of credentialism in order to argue convincingly against the cops, and against becoming cops with our students.

We've written this piece primarily for mathematicians and mathematical educators, but 95% of it is accessible without any background knowledge in mathematics.

We hope this is useful to someone.

Parable

Whenever humans come together and organize themselves socially, they must make decisions about how to distribute power, resources, and responsibilities.

As mathematicians, we often work with toy models – simplifications of complicated phenomena designed to capture the essential features of a scenario we aim to understand. So in that spirit, we invite the reader to imagine a toy model for what we hope they recognize as an unjust, unethical, and arbitrary way to structure a society and distribute resources.

In our fictional society, there is a venerated ancient document; decision-making power lies with those who claim convincingly to be able to interpret it. The document has been passed down from generation to generation and deciphering it requires years of training. Aspiring priests need to learn an arcane language completely unrelated to everyday life. Those aiming for high social status, or even material security, must study the document under the tutelage of the priests, though they mostly don't aspire to membership in the actual priesthood. Desirable positions in the social hierarchy are parcelled out to those deemed by the priests to have studied the document well.

The document is treated with such respect for many reasons: with the right training, one can use it to describe some aspects of the world with great accuracy; this has proven beneficial to those with enviable positions in the social hierarchy, and occasionally to everyone else. It's also highly respected just because the priests themselves seem to find it meaningful and compelling; given the priests' power as gatekeepers, and the fact that anyone who's anyone has studied with the priests, it wouldn't do to challenge perceptions about the text, lest one be accused of not understanding it.

The ancient code in which the text is written has its own internal logic, but translation is a messy exercise and often more of an art than a science. Two priests may offer two vastly different approaches to the same excerpt. What they can all agree on, though, is that the script is meaningful and deep. And it really *is* meaningful to the priests. Their investment in the text and its code shores up their own authority and is in that sense self-serving, but that is not to say that the code has no real, useful, joyous, or beautiful content. The state of affairs is more a perversion of something imbued with genuine humanity – something built by countless people all over the world and to which all peoples have a claim – than an outright farce. In any case, the power of priests rests not only on the presumption that the code is important, but that not just anyone can do what they do.

Citizens spend years being tested on their knowledge of the text and sorted into categories based on their performance. The highest scorers have the best chances of becoming priests – though few do, or want to – or, more typically, other high-powered functionaries with great decision-making authority. This society has an emperor, and a complex system of laws and courts. Commerce is crucial, and the text informs some of its complex conduct. All of this rests on the labour of many anonymous people, who tend to put more into supporting the society than they get out (and many are abandoned completely). But the high-powered functionaries have a convincing story that is widely believed: the structure of the society is correct, because it is guided by parts of the text, and the inequities are tolerable because anyone can strive for a better situation: just go to the priests and learn the code!

This creates a positive feedback loop. Over time, the societal fabric begins more and more to reflect the logic of (parts of) the sacred text's code. The

functionaries seek more and more to justify the inequities of their society by appeals to the code, claiming that each new plan for consolidating their power is dictated by assiduous consultation of the text. Before long, the ability of a citizen to thrive *in any area of life or in any capacity* correlates in some way either to their knowledge of the text, or to their ability to claim this knowledge and be believed. This logic becomes self-justifying: *why do we ensure that knowing the code is necessary for success? Because in order to be successful, a person must know the code.*

Crucially, because the code requires translation and interpretation, *it too* (or at least, the way in which it's talked about, absorbed, and applied) can and is reshaped and remolded by the people charged with its curation. Entire languages develop around the "best" ways to describe it and to teach it, and these methods are often conflated with the code itself. *Why do we teach the code in this way? Because this is the way which best reflects the content of the code, as evidenced by the fact that priests designed the method and they know the code best of anyone.*

Even though natural resources abound, not everyone gets what they need to survive. Structures are organized so that one's access to the basics is tied to one's position in society. Each citizen must commit themselves to learning the code whether or not they're even remotely interested in priesthood. If they pass the required tests, they're granted the title of "adequate code reader", and almost all roles that come with material security require this title (but of course even with the title, access is not a guarantee for all but a select few). The functionaries see this, and create new programs, incentives, and laws that exacerbate it, always justifying these by appeals to the code of the text.

Society stratifies into castes according to how much power and resources each commands. The highest caste – from which some of the priesthood is drawn – has been on top for centuries.[1] They didn't always rely on the code as the source of their authority and power. Their ancestors (and indeed, caste membership tends to be hereditary) wielded control through divide-and-conquer tactics, by pointing to ultimately meaningless differences between people, idealizing their own common features and demonizing others. This method of domination was so effective that the power relations established by it still reign supreme.

However, the meaninglessness and arbitrariness of the differences used to justify these old hierarchies eventually became too obvious. Many began to question the validity of distributing resources on the basis of these differences. This was in spite of the great pains taken by high caste intellectuals – including many of the priests – to place these differences on firmer analytical footing, in some instances even creating entire scientific traditions for this purpose. In fact, many modern interpretations of the code derive from the explosion of technical activity from this era. Today, a fair number of priests with high caste ancestry still attempt to reinforce the logic of the old hierarchies by dressing

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[1]Many of the priests don't come from the highest caste, but rather from the high-powered functionary caste a couple of tiers down. Their forebears achieved this relatively high status as trusted servants of the highest caste, and many of the priests are very anxious to retain this privileged but precarious-feeling position; there's quite a lot of jockeying for position among the priests.

up tired arguments in codely language. The official line, that resources and power are doled out on the basis of facility with the code, is itself one of these tired old arguments, but it's sufficiently opaque that many people who would object to the overtly bigoted justifications of yore believe it.[2]

Because the stakes are so high and the content of the code seemingly so far removed from the sorts of things that most people would actually care to learn about, cheating in the priestly exams is rampant. Entire networks of youth spontaneously emerge, cooperating to game the system. And entire networks of priests emerge in response, creating new tools to catch cheaters in the act so that they can be appropriately humiliated and punished for their transgressions. Of course, most cheaters don't get caught, so many youth see it as an entirely reasonable way to navigate the arbitrary hurdles placed between them and securing basic needs.

Even amongst those who don't cheat, the overwhelming majority of students are too exhausted by the pressure to perform and too uninspired by the way in which most priests prefer to teach the code to actually retain much of anything once exams are through. Of course, they have retained *something*: that it makes sense to decide who eats based on how rapidly people can absorb and regurgitate pieces of code that almost no one understands anyway, and it also makes sense to run the next generation of students through this absurd and oppressive gauntlet.

We end the tale of this unfortunate society with one question:

What should priests do if they become interested in subverting all of this?

Reality

Before attempting an answer, let's connect the toy model to reality and argue that the simplifications don't significantly impact the points we'd like to make about the real world. The "ancient text" or "code" represents mathematics, and priests are mathematicians, mathematical scientists, or mathematically trained people who are primarily compensated on the basis of their training. The toy model does not seriously attempt to capture the history of mathematical science, and the reality that every culture and every person has a claim to a mathematical tradition. It also doesn't attempt to engage in the very interesting and difficult question of what "mathematics" even is and what constitutes it. In any case, here are some key features of the model that we would like to highlight:

- The practice of mathematics as a profession is highly ritualized, and is associated with comfortable to enormous material rewards[3]. It is also a

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[2]Especially those in the functionary caste who have benefited from the system.

[3]For example: the 2020 US Census estimated the real median annual earnings for workers in the US at \$41535, and \$56287 for full-time, year-round workers. The US Bureau of Labor Statistics gives the 2021 median annual earnings for workers in the *mathematicians and statisticians* category as \$96280 (`https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm`). More broadly, university mathematical training is a formal prerequisite for, or reliable pathway into a variety of careers in which compensation is relatively to extremely high; indeed this fact is routinely used to encourage students to specialise in mathematical sciences.

deeply human practice that transcends its modern professionalization. For centuries, people in every culture have cultivated joyful, playful, and spiritual mathematical experiences[4]. At its best, it can artfully draw attention to deep intuitions and facilitate the sharing of complex interior experiences with others. It can be a source of comfort by inspiring the feeling that one has understood something – or some*one* – in a world where certainty is impossible. By setting up this analogy, our goal isn't to disparage mathematics, just as our goal isn't to disparage the practice of religion by choosing the term "priest". We instead take aim at the oppressive hierarchies and gatekeeping structures that have cropped up around both organized religion and modern mathematics which further alienate people from their innate spiritual and mathematical power.

- The "meaningfulness" of mathematics is subject to various feedback loops that operate as people play an active role in shaping our world and our organizational structures. Social situations dictate the ways in which mathematicians create models, and the outputs of those models reinforce aspects of the social situation they were created to simulate. This dynamic makes the models look even more effective, until the social situation looks more and more like a fixed reality, and the model looks more and more like a perfect reflection of that reality. We have in mind the history of statistics and its connections with eugenics[5].

    Or more recently, one can look to the rise of *predictive policing*, in which researchers steeped in the ambient ideologies of a carceral police state (for example, the US) believe enough in a well-defined notion of "crime" and in the appropriateness of policing as a response to "crime" to collaborate with cops and design algorithms for forecasting "crime". (For some reason, wage theft or the ongoing corporate destruction of our environment do not qualify as "criminal" for these purposes.) The algorithms are trained on past "crime" statistics. And since the social function of police is to protect private capital, terrorize Black and Brown people, and prop up cisheteropatriarchy and white supremacy, the statistics and therefore the algorithm itself will reflect and eventually reinforce this social reality[6].

- The language of mathematics, as practiced as a professional discipline, is esoteric and inaccessible to an overwhelming majority of people. As any practicing mathematician can attest, even professional mathematical scientists will most likely not understand the subtleties of language being used by an adjacent subfield within the broad discipline of mathematics. The situation is worse when it comes to laypeople, through no fault of theirs – we see this as a systemic failure of mathematical communication. For example, even if an algebraic number theorist doesn't understand the specifics of their colleague's work in partial differential equations, they can at least believe that this sort of mathematics has the potential to be deeply interesting, playful, or even funny to someone else. Of course, there is a fair amount of condescension, caricature, and cultural schism

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[4]See e.g. *Rehumanizing Mathematics for Black, Indigenous, and Latinx Studies* [1]
[5]See, e.g. Chapter 6 of [3] for a well-known discussion of an example, namely factor analysis.
[6]See e.g. [2] or [5] for more about the feedback loops inherent in predictive policing.

between differently flavored mathematicians. But because we conceive of all of these different flavors of thinking under the one umbrella term of "mathematics" and because mathematicians have themselves experienced love of their own little corner of the subject, they can in principle respect that other forms of mathematics are being done and that people are better for doing it. Many laypeople miss out even on this very basic level of appreciation, because for them, mathematics was dull, rote, authoritarian, and alien.

- People can garner immense respect, power, and influence over the thinking of those with even more power on the basis of their capacity to employ mathematics[7], even if they choose not to become mathematicians; and conversely,
- people who do not perform conventionally well on mathematical assessments are often shut out from opportunities to secure the basic essentials for life (for example, being hired for a job, even if the job has little or nothing to do with what one might see in a mathematics course).[8]

The purpose of a system is whatever it does.

If our official excuse for the inequities of our society is that individuals can avoid their depredations through the acquisition of (academic, and in particular mathematical or scientific) formal credentials, and if that excuse is backed by sufficiently potent threats and incentives, then people will respond accordingly.

In the context described above, this means that students will, on a systematic basis, make a rational, considered choice to engage in what we (with irritating preciousness and sanctimony) call "academic misconduct". They will also learn mathematics within the minimum of the limits of their personal desire and of their personal environment – most people find mathematics meaningful to some extent if exposed to it in a caring and stimulating way (and if their basic needs for safety, shelter, food, and dignity are met, which is not guaranteed) and we provide this at some times to some students. But, as a group, in response to years of incessant messaging about the importance of academic credentials and their understanding of the implacable demand to

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[7]We refer to a variety of phenomena here. We have already mentioned the advantages of formal credentials in mathematical sciences in the labor market. Mathematical or closely-related training also provides a pathway for a select few into more rarefied positions of very serious power in, for instance, management consulting, defense contracting, policy advising, and the thinktank-industrial complex (archetypes here include John von Neumann and Fred Singer). We also perhaps refer to people — James Simons, Larry Page, etc. — who have leveraged mathematical training (among other things) into enormous wealth and power, although these outliers are perhaps less important illustrations of the point.

[8]This is frankly acknowledged by people charged with teaching and caring for young people when they push those students to "study a 'STEM' subject", and is also acknowledged by a tertiary education system that privileges lucrative – and hence attractive to soon-to-be-indebted undergraduates – disciplines over others, to the point of closing "unprofitable" departments and making tertiary education workers redundant. Even the subfields of mathematics that are less obviously leveraged in the service of profit are not immune, as demonstrated by recent events at the University of Leicester: `https://golem.ph.utexas.edu/category/2021/01/problems_at_the_university_of.html`.

sell their labour for the highest possible price after graduation[9], students will cheat.

This will take many forms. They will make an "honest effort" until other demands on their time and attention exceed their interest in the topic or the conscientiousness that's been inculcated into them, and then they will seek help now and again from quarters we've deemed off-limits. Or they will just copy their neighbour's paper, or virtual paper, in an exam. Exam papers and homework solutions will be shared online for all; WhatsApp groups will proliferate that an observer unfamiliar with our competitive credential factory would identify as instances of mutual aid but that we will view as violations of "academic integrity".

That observer might also identify cheating as a subversive protest against an oppressive academic regime. It's not just that many students are disinterested in the tedious ways in which we tend to present mathematics. It's also that they know they're being forced and coerced. This is true across the board with schooling, but in mathematics the feeling of coercion is perhaps magnified because of how conventional mathematics instruction has sucked so much of the playfulness, exploration, and freedom out of the experience. When people think of an entire subject as an exercise in learning how to follow the right recipe, it's no surprise that the content itself becomes tangled up and associated with obedience and rule-following for its own sake. Totally independent of someone's potential interest in mathematics is their capacity to tolerate this level of authoritarianism and conformity.

Cheating is an inevitability of the system and, again, the purpose of a system is what it does. *The purpose of our educational system and the socio-economic context in which it functions is, among other things, to cause students to cheat.*

A key conceit of formal education is that students are being prepared for participation in a competitive labour market, and that the worst effects of our dire social stratification are avoidable on an individual basis through education. The drive to "widen participation" in tertiary education is therefore, among other things, an exercise in buck-passing: instead of assuming collective responsibility for the well-being of everyone in society, we direct society's resources toward the reproduction (and enlargement) of a relative labour aristocracy in an attempt to offload our collective responsibilities onto individuals. We justify this with a mixture of myths: "meritocracy" and "equality of opportunity". The first is an incoherent soup of racism and classism, to be dealt with in future discussion.

The second – "equality of opportunity" – relies on widespread agreement that we distribute resources and power on a basis that, though harsh, is not capricious and is fair. Academic cheating undermines this myth. If the key mechanism for determining who will be given a chance at a secure seat at the table were to widely be viewed as corrupt, not a "level playing field" (to mention an absolutely odious metaphor), then the notion that any (sufficiently

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[9]For example, students tend to be keenly aware of the debt burden they are assuming by pursuing tertiary education, that this will require maximizing their income upon graduation, and that this will in turn cost money (consider, e.g., housing costs in the places where relatively high-paying graduate jobs are concentrated).

"meritorious") person can obtain a modicum of material security and social status through hard work at the credential factory would fall under suspicion. We might have to contend collectively with the injustices looking us in the face.

This is very similar to typical views on "crime". The situation on the ground is: a certain proportion of the population must be barred from regular participation in the formal economy in order to maintain wages at a level tolerable to capital. This exclusion is not done at random; Black, Brown, and Indigenous people are disproportionately excluded; poor people are disproportionately excluded, women and other oppressed genders are relegated to certain forms of systemically undervalued work etc. This process is geographically concentrated and inter-generational; it's not the result of a specific decision reversible by a quick application of institutional mechanisms: almost every institution, from corporations to courts, landlords to labor unions, Congress to the cops, is implicated. Exclusion, poverty, struggle, despair: the purpose of a system is whatever it does.[10]

People have to engage in some kind of economic activity to survive, and therefore occasionally have to negotiate, settle disputes, and solve resource-allocation problems without access to sanctioned legal rituals. So another purpose of the system is to create "crime". Sometimes, people call the cops. And, just as the system of exclusion, poverty, struggle, and despair needs cops to maintain the myth that "crime" is a matter of individual deviance and privatised aberration, when students cheat, we respond to the insult to our belief in "fair competition" by adopting the role of cops.

The parallels are quite close. We employ technological tools (plagiarism-detection software and other ed-tech boondoggles); we take a forensic approach to grading (or at least we are often told to); we interrogate suspected cheaters, humiliating them by forcing them to confront what they have not understood in our presence, and then eliciting confessions; we rehearse fearful rhetoric about the spectre of cheating.[11]

But just as no amount of state violence and repression will eliminate "crime" in a system whose de facto purpose includes producing it, no coercive methods will eliminate cheating in an educational system whose fundamental structure systematically renders cheating the optimal option for many students. And just as legally-sactioned state violence is inimical to the project of building a free society, draconian policing of cheating is inimical to the practice of education in the furtherance of human flourishing and liberation.

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[10]The reader who finds this last sentence uncharitable, and who, citing the enormous complexities of social injustices, wishes we had distinguished between the *intentions* of the powerful actors in the system and the *results* of their actions, is invited to apply their ideals consistently. Specifically: survey your students about how well they *intended* to do on the last homework, and grade them accordingly.

[11]One of us works in an institution where, during the peak of a COVID wave, senior faculty and administrators argued forcefully for in-person final exams because of the "risk" of "collusion" inherent in online exams.

What to do?

So we return to the question asked above: what should the "priests" do if they wish to subvert all of this? One could argue – perhaps rightly – that the more fundamental problem is not cheating and what to do (or, not do) about it, but the credentials and grades – for which our system forces students to compete in order to secure their futures. We'll pick this thread up in a separate essay.

But for now, and in keeping with the comparison between policing "academic dishonesty" and policing in general, one could also argue – perhaps rightly – that more fundamental to the problem of prisons and police is the way in which our system forces people to compete for material wealth in a seemingly zero-sum game. This is why prison and police abolition is inherently an anti-capitalist movement. However, there is still a clarity and directness we get from facing the brutality of prisons and of the police as societal blights in and of themselves. We don't lose sight of the fact that abolishing the police must be tied to ending capitalism, but we also allow ourselves the flexibility to envision how community members can intervene on the ground, now, to weaken police power. And of course, because of the role police play in upholding racial capitalism, any such intervention, if successful, goes towards eroding the deeper systems of control and domination anyway. In this spirit, we want to highlight some ways for mathematics lecturers and professors to undermine the power of formal disciplinary procedures around "academic honesty". We hope these are the kinds of suggestions that will ultimately contribute to the erosion of grades and credentialism altogether, and in the meantime, they may be more accessible or possible to implement than simply not assigning grades.

Disclaimer

We are both academic mathematicians with comparatively high levels of job security (tenure at a US institution and a permanent contract at a UK one, respectively). So, first, we are in no position to suggest practices for primary and secondary school or K-12 teachers; we don't have the experience of navigating the particular institutional hierarchies in that world. Much of the argument we make below will rely on the guiding principle that a student in our classes knows better than anyone else what they want out of their experience in a mathematics course and that it's patronizing to pretend otherwise. We're sure that some version of this principle is also true for younger students, but we're not qualified to articulate it in that context and we have university students in mind when it comes to the specific suggestions we make.

Second, even within the small world of academia that we do know well, a majority of people aren't granted the sort of job security we both have. Defining a *boss* as someone who has the power to hire and fire[12], untenured academics (including precariously-employed colleagues, for example graduate students, who do a large proportion of undergraduate teaching work – specifically *assessment labour* highly relevant to the question of cheating – in

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[12]or, at least, someone whose role makes them a major factor in one's job security

many departments) arguably have numerous bosses: course coordinators and senior faculty in the department; the menagerie of deans and managers who allocate resources; provosts and vice-chancellors and presidents; fascist state legislatures or bureaucratic regulators engaged in various ideologically-driven projects to destroy public education; senior academics at other institutions who may be asked to write on behalf of a candidate for tenure or promotion – the list goes on. There is more to say about this, and perhaps we will elsewhere. For now, suffice it to say that *readers should interpret our recommendations below in a way that is compatible with their own understandings of risk, in their own environments*.

At the same time, we have seen these sorts of disclaimers serve as rhetorical bail-outs, veering into toxic individualism – "make whatever choices are best for *you*" (whatever that even means). The warnings to not "rock the boat" until tenure comes, after which you can say whatever you want safely, and the cynical dismissals along the lines of "tenured people with radical perspectives who argue for subversion are too detached from the realities of academic job insecurity to be taken seriously" are two sides of the same dissent-stifling coin.[13] So, for instance, what we are *not* saying in the above paragraph is that graduate students with abolitionist principles are exempt from doing *anything* to incorporate those principles into how they're thinking about cheating in the context of their jobs as educators, by virtue of being vulnerable workers at the bottom of the academic hierarchy. While there are of course major differences between academic workers in terms of autonomy and vulnerability, and these differences should not be erased, *all* educators have power. And to our fellow educators for whom these arguments resonate, the invitation is to think creatively and push yourself to take risks in order to align your teaching with your principles.

Suggestions

Here are tentative answers to the question of what (not) to do about cheating:

Kill the (academic) cop in your head.[14]

If you teach students in tertiary education, you almost surely have spent years steeped in that system as a student, and very likely spent years before that steeped in cultural messaging about the importance of things like "hard work", "resilience", and, most crucially for present purposes, "integrity". It's almost impossible to avoid absorbing such messaging while pursuing "education" and formal credentials — which, it's likely also been hammered into you, is the only really valid and desirable starting point for the only really valid and desirable path through life. It seems likely that, as a student, you did not cheat much or that you passed moral judgment on others (and maybe on yourself) when it came to cheating.

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[13]On the other hand, readers should absolutely disregard the opinions of tenured academics who shill for empire and capital, for example those who claim graduate students, or other of their colleagues, do not need unions.

[14]You can start by reading this blog post by Jeffrey Moro [4]: `https://jeffreymoro.com/blog/2020-02-13-against-cop-shit/`.

So we suggest interrogating the messaging you've internalised: when you think about cheating, which of your attitudes derive from your understanding of real human experience and which of them are just vague dogmas weighing on your mind like a half-remembered nightmare?

We assume at this point that our preceding arguments have resonated with you, though they are likely to conflict in a profound way with attitudes you've solidly internalised. The first step is to understand why a critique like ours of the notion of "honesty" in the classroom, while perhaps convincing in the abstract, *feels* wrong. Reflect on whether your default beliefs about cheating derive from explanations based on material realities, presented to you clearly, or whether they are just one product of the ambient academic culture you experienced as a student, fixed in your mind by the anxiety and trauma of navigating a sea of external pressures and expectations.

Then think about whether you want to teach your students through clear and humane guidance, holding yourself explicitly responsible for the justifiability and utility of each idea you try to communicate, or whether you wish to carry on the counterproductive and dehumanising tradition of teaching (partly) by force. Finally, and crucially – because indeed none of the above is possible to do genuinely without this – extend to yourself the same humanity you would to your students.

Don't penalize cheating.

Stop noticing cheating. Stop checking students' work against Stack Exchange answers. Stop forcing students to confess to it. Ignore students who snitch about it. Stop using "anti-plagiarism" software and stop letting your employer waste money on it without a fight. Stop structuring assignments with prevention of cheating as a constraining consideration, especially where it would interfere with creating activities that are actually instructive and interesting. If, despite your best efforts, you do become aware of cheating, don't initiate Kafkaesque administrative procedures.[15]

Even if you have little control over the design of your course, or are constrained by rules and administrative structures, you can, at minimum, ignore cheating when you suspect it. And, in accordance with killing the academic cop in your head, teach yourself to stop suspecting it.

Of course, just refusing to penalize cheating is not really sufficient for subverting an inhumane system. Ideally, you do have some control over the administrative context of your teaching, and if so, you should try to couple your refusal to punish cheating with alternative structures for support. The abolitionist agenda is not merely to dismantle policing, but to funnel the resources society wastes on policing and prisons back into communities to support their health and well-being. All of the time and energy you'll save by stopping the things we mention above can be spent on building a healthy classroom environment which, in the best of worlds, will eliminate some[16] of

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[15]You also have better things to do with your time, like helping students learn their desired subset of what you have to offer.

[16]We chose the word "some" carefully here, mindful of the damaging expectation to be absolutely everything and to do absolutely everything for students. A teacher can no doubt play an important role in the lives of their students, but it's unrealistic and unhealthy to expect

the incentives to cheat in the first place.

Design your syllabus in a way that *explicitly permits* things that would be punished in other classrooms: for example, give unlimited time[17] take-home exams where students can consult any resource, in the same way a researcher does when they try to understand something.

We offer the following as an example homework problem demonstrating this:

If G is a group and H < G has index 2, *must H be a normal subgroup?*
Spend at least 90 minutes thinking about this before consulting any outside resources.
If you're feeling stuck after 90 minutes, consult the Stack Exchange post entitled Subgroup of Index 2 is Normal *in which the poster asks about this and proposes a proof that doesn't quite work. (url here:* `https://math.stackexchange.com/questions/84632/subgroup-of-index-2-is-normal`*).*

- *What exactly is wrong with the poster's strategy? Can you come up with a specific group in which the strategy fails?*
- *Explain, in your own words, the top rated reply by Bill Cook (this is only required if you didn't already come up with your own answer in the first 90 minutes).*
- *At the very end of Bill's reply, there is an example of an index 3 subgroup of a symmetric group and the claim is that it is not normal. Can you demonstrate this concretely?*

After the first 90 minutes, collaboration is allowed and encouraged, as is looking online at other places besides the Stack Exchange posts, or in books, for guidance (record whatever sources you decide to use).

We can hear the skeptics' questions ringing in our ears:

- What prevents the students from jumping straight to stack exchange before the 90 minutes?
- What does this to do address the sort of cheating that occurs when students copy from one another during collaborations?
- Won't this discourage a student from spending 5 or 6 hours of purely unstructured creative time on the problem in order to tackle it?

Our answer to both of the first two questions is "absolutely nothing". We do believe that structuring assignments in this fashion can and will reduce cheating *but that is not our core motivation*. Our goal is to stop dehumanizing our students. An instructor can try to exert maximum control over their students'

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an instructor to design a class in a way that somehow cancels out whatever traumas or violence people experience while navigating life outside of class in late-stage capitalism.

[17]One of us has gotten feedback from students that in some contexts, unlimited time can be more stressful than offering merely *enough* time that no one feels rushed to finish. In one class, students reported that if a take-home exam was due two days later, they'd feel an implied pressure to spend close to the full 48 hours on it, sometimes skipping meals and sleep. We encourage instructors to strike the right balance based on whatever culture feels present in the room with that particular grouping of students. The key point is that timing students for the sake of determining whether they can perform on command and swiftly is some Taylorist bullshit.

actions and decisions in a way that minimizes cheating, or they can respect students as full human beings navigating complicated social and economic forces, but they can't do both at once.

As for the third question, our answer is "yes, hopefully". To be clear, there is nothing wrong with assigning very demanding or deep problems and we appreciate the pedagogical importance of pushing our students to take on challenges in their work (see some of the discussion on *collective/constructive cheating* below for more on this). So we urge the reader not to construe us as arguing that instructors should water down their materials or their coursework.

We're simply suggesting that the best pedagogical results come when challenging material is properly framed and structured. The problem above encourages students to think expansively about the content in a way that mirrors how a researcher might approach a question and in a way that would be impossible while adhering to conventional rules around cheating. We would ask anyone who feels that some sort of "depth" is lost by structuring a problem in this way to think about why we combine independent thought, conversation, and consultation of the literature in our own research.

It should be emphasised that refusing to penalise cheating is not the same as refusing to acknowledge its existence or refusing to confront the reasons why it's a persistent epiphenomenal product of how educational institutions are structured. There *are* important problems caused by cheating, of which the most salient for us is that, like other "crime", the benefits of cheating accrue disproportionately to the privileged, while they experience the fewest administrative consequences.

We are all familiar, for example, with networks within fraternities for supporting systematic cheating; many will have witnessed instances where students from privileged backgrounds are able to marshal considerable resources[18] to avoid the bureaucratic consequences of being caught cheating, while those without such resources are at the mercy of the educators and administrators whose job is to punish them. This mirrors the functioning of the "criminal justice" system in ways that we hope are obvious: while both are inevitable products of our economic structures, wage theft has more significant economic consequences than burglary, but is not generally addressed by caging sleazy employers and subjecting them to systematic violence and dehumanisation. And nor should it be![19]

Similarly, it is not our place, as representatives of entrenched institutional power, to redress inequities between our students by cracking down harder on cheating by those more advantaged. Cheating dragnets and disciplinary measures aren't currently doing anything about the advantages enjoyed by some groups of students anyway, and it's hard to imagine how applying them differentially would even work. The core issue with, for example fraternity- and sorority-based cheating networks, is the existence of (very often racist and classist) fraternities and sororities, and the ways they are harnessed to hoard resources and prevent the children of the rich and powerful from facing

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[18]In one instance at an institution where one of us was previously employed, up to and including parentally-funded criminal defence attorneys in an "academic integrity" proceeding.

[19]Well, certainly not by the state, anyway.

accountability in any sphere of life.

What is clear is that the draconian focus on preventing and punishing cheating makes the whole edifice of mathematics teaching that much more miserable and dull for everyone. Instead, we should work toward a state of affairs where cheating is not penalised *and* the forces that render cheating a necessary choice for many students – forces that overlap with the sources of those inequities – are eroded.

For this, we need to both refuse to penalise cheating, but also wield our power to accommodate students' human needs and undermine the system of incentives that engenders cheating. We can't just leave a vacuum.

Communicate the costs of penalization honestly and help your students kill the academic cop in their own minds.

Over the the last twenty years, tough-on-crime pundits have argued in favor of the controversial stop and frisk policies of the NYPD by claiming that they "work". What "work" means varies from one "expert" to the next, but the general message is that the practice of systemically harassing Black and Brown people across the city reduces overall violent crime rates. First, it's important to make clear that we don't buy this. Far more often than not, official police policy is designed not to respond to the actual facts on the ground but to justify whatever practices the cops already engage in. From this point of view, stop and frisk was never about reducing crime (even if crime reduction is a by-product), but about sanctioning the widespread practice of racialized police harassment.

Contrary to the NYPD perspective and that of its cheerleaders, we would actually argue that stop and frisk *contributes* to crime – at least in the long run – by inflaming the underlying social inequities that give rise to it. To call on a metaphor used by the Just Mathematics Collective [20], a border wall keeping Indigenous peoples away from their homeland might on any given day prevent revolution seeing as it's literally and physically barring return. But at the same time, it contributes to and creates the conditions that makes revolution inevitable.

But even if we grant the claim that stop and frisk reduces crime rates, the only way it would make sense to believe that it "works" is by ignoring the obvious costs, and the people forced to pay them. Similar arguments could be used to justify bombing the city[21]; after all, dead people don't commit crimes. For us, the entire premise of stop and frisk and its defense is morally bankrupt: the ends don't justify the means.

When trying to assess what "works" and what doesn't, we encourage instructors to approach decision-making in their classrooms in a way that accounts accurately for the costs, and who pays them. In any case, we would argue – in parallel to the discussion of stop and frisk above – that cheating

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[20]See `https://twitter.com/jm_collective/status/1485754665992138752`.

[21]Police have indeed done this, as in the case of the MOVE bombing in which the Philadelphia police bombed a city block, killing many including children and intentionally letting the entire block burn.

prevention actually contributes to cheating in the long run [22], by fueling the very dynamics that give rise to cheating in the first place.

Even if prevention and "honesty enforcement" brings cheating to a complete halt – which it won't (there is no evidence that it reduces cheating) – we would still have to come to terms with what we forfeit when we design our classrooms like the panopticon. Both of us have heard too often that cheating prevention "works" because it reduces cheating, with no mention of the pedagogical repercussions of criminalizing and humiliating students (and, usually, some students more than others).

For us, the ends simply do not justify the means, because the means violate the humanity of our students. We view consent as a helpful framework here: a healthy learning environment is only possible when people feel safe and free enough to engage from a willingness to be present independent of coercion. Enforcing "academic honesty" can certainly destroy the possibility of this, but even if cheating is never penalized, students still know that it could be and this knowledge triggers the academic cop in each of their own minds. For this reason, we suggest that you not only stop the punishment and the criminalization, but also that you communicate clearly and honestly with your students that you will not be paying attention to "academic dishonesty", *and* that you communicate *why* by sharing some version of the above discussion. It shouldn't be controversial or confusing to convey to students that the extent to which they learn is ultimately up to them, and that it's not your job to force-feed or police them.

The students who might decide to cheat upon hearing that you won't be punishing them and who wouldn't have otherwise done so, are precisely the students who you would have been "teaching" through force. Their engagement hinges upon the threat of your punishment. We'd rather someone simply not learn calculus than have to spend the semester under your boot *while also not learning calculus* (because genuine learning requires agency, safety, and consent), at least so long as we don't confuse learning calculus with picking up the minimum required to regurgitate it and then forgetting it immediately after the final exam.

And perhaps there are students who truly manage to retain the material when forced to do so and not because they're fueled by genuine interest, but in those cases, the calculus isn't the only thing they – and everyone else in the class – will retain. They also learn that coercion and manipulation are acceptable approaches to communicating with other people in an academic context. It's no wonder abuse, harassment, and dehumanization by successful and senior faculty is so prevalent.[23] It doesn't need to be this way.

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[22]This is not incompatible with the claim that cheating prevention has the potential to reduce cheating in the short run.

[23]We don't mean to imply that harassment and abuse in academia can or should be solely traced back to academic disciplinary measures and the policing of cheating. These problems are of course complicated and a reflection of the patriarchal/sexist/white supremacist/classist/transphobic chauvinism that infects society more broadly.

Organize.

A private campaign against the penalisation of cheating will do a bit of good for your particular students, but won't do much to address the systemic reasons why students sometimes have to cheat, or the damage caused by the policing of cheating. It also probably won't last long: your experiment is likely to end in some sort of administrative quagmire whose exact magnitude will be determined in the best case by how much you enjoy unwinnable email chains and at worst by the terms of your employment contract.

So, at some point you will need to bring fellow educators into these practices with you. You will need to think of how to meet them where they are and how to persuade. You will need to discuss, for example, the question of whether you and your colleagues yourselves struggled through the academic meat-grinder just for the privilege of doing something boring and damaging – policing cheating – while enduring below-inflation pay rises (or whatever grievance they have with your institution). If there are existing organisations advocating for more worker autonomy and less managerialism in your institution – maybe you are lucky to work in an institution where faculty have a great deal of collective decision-making power; maybe you are a member of a particularly good union; maybe student representatives would back you up[24] – you can try to leverage their influence to argue to administrators that policing cheating is a poor use of time and resources.

Graduate students can play an important role here. At many institutions, graduate students are also on the front lines of labor battles, and "divide and conquer" is a tried-and-true strategy of bosses. Administration will commonly offer concessions or improved working conditions to faculty in exchange for their help in weakening grad student organizing and unionization efforts. And unfortunately, faculty commonly accept such offers.

Because institutional rules penalizing cheating impact all instructors by forcing them to spend valuable time and energy in a pointless, destructive way, it's an issue with the potential to bridge gaps between workers of different layers in the academic hierarchy (excluding of course administration). Some of the educators who we know and who are most passionate about ending the systematic dehumanization of students, are themselves graduate students. So, it is not only that organization will be necessary to dismantle the pointless cheating dragnets; conversely, the desire to dismantle the dragnets – as it has the potential to be shared by faculty, grad students, and undergraduates alike– can be harnessed to strengthen labor organizing in general.

Collectively/constructively cheat in your extra-academic community networks

One of us (who we'll call the tutor in the story that follows) became motivated to write this essay after helping a community member – an older person working hard to earn a bachelors degree – with an online statistics course. Over the course of several weeks, the tutor worked closely with this person and helped with various homework assignments. After a few sessions, it

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[24]An exploitable feature of the neoliberal university is that student/"customer" grievances often resonate with administrators to an extent that staff/worker concerns don't.

became clear to the tutee how to distinguish between her genuine interest in statistics, and the pure obligation she felt to trudge through material she had no use for save for the fact that her degree was being held hostage until she completed the course. Since she – like most people when actually listened to – had the capacity to envision and talk intelligibly about her own future, she knew she simply had no interest in the finer details of Poisson distributions and she explained this to the tutor. She did, however, want to understand the basics, and her clarity made it possible for the tutor to engage in a way that nurtured those interests without extinguishing or trampling on them.

The equilibrium we eventually reached for our sessions together was to begin with the tutor giving a 10-15 minute explanation of the basic idea. For the remainder of the session, the tutee practiced with the ideas she actually wanted to understand, and the tutor completed all of her weekly online work for her. This is work that would have taken her 15 to 20 hours to complete, partially because her instructor had little interest in teaching and she was already weeks behind when she approached the tutor. The realities of holding down a job and taking care of family would've made spending that amount of time – on one of several assignments for several classes – virtually impossible. So, the tutor cheated for her and she graduated later that year.

We think of this as an example of *collective/constructive cheating*: when someone (the "tutor") who knows the material and who is in community with a student (the "tutee") helps the student to cheat when

- the tutee has no desire or genuine interest in the content;
- the tutee is being denied access to material resources unless or until they "perform" in this course;
- the tutor is *not* the instructor of the course in question (nor do they have any direct power over the academic trajectory of the student, e.g. by being faculty at the same institution the student attends);
- the tutee and tutor share a mutual political analysis of how academic gatekeeping plays a role in class warfare and have situated the decision to cheat in that framework.

Both the third and fourth bullet points require some explanation. First, after everything we've said about cheating prevention and its dangers, what would be so bad about an instructor helping a student to cheat in their own course? For one, this would get very messy, very quickly. Besides having to face all sorts of disciplinary measures from administration, the instructor would risk erosion of important pedagogical boundaries that facilitate learning. **Now is a good time to emphasise that we are absolutely not arguing that causing students to be challenged, or for students to struggle, is "bad" and is to be avoided.**

We often learn by pushing ourselves and testing our limits. Of course, healthy learning also requires an atmosphere of safety and respect for everyone's full humanity, which is one reason why games – structured activities where struggle is *simulated* – can be such useful teaching mechanisms. So we are not arguing for the abolition of all rules or all boundaries between teacher and student, nor are we arguing that students should never feel frustrated by their coursework. Rather, we are first arguing that when performance in a

course is tied to whether or not someone can eat, the "struggle" is no longer merely simulated. We are also arguing that any structure a teacher imposes on an assignment should actually be in service of pedagogy, not solely for the purpose of doling out punishment and humiliation when it isn't adhered to.

When a teacher imposes structure and then helps students to subvert that structure, they are in the best of worlds working against their own efforts, because in the best of worlds, the structure was only ever there to facilitate the learning process. Consider for example the model homework problem presented earlier. It is *extremely* structured, and rules abound[25]. So if a teacher uses structure in an appropriate way, we're not quite sure what helping their own students to cheat would even look like. In any case, students should be simultaneously encouraged to challenge themselves (and we argue there is no way to consistently do this while also helping them to cheat in your own course) and to prioritize their commitments in ways that make sense for their lives without the threat of humiliation and expulsion (and we argue that this is achieved by letting students know you will not be penalizing or looking for cheating if they do decide to seek help from some not officially sanctioned external source).

As for the fourth bullet point, it is quite likely that the tutee is being made to internalize all of the toxic messaging around academic (dis-)honesty we have outlined above. They may therefore feel not only guilty if and when they decide to cheat, but also academically inadequate or inferior to their peers. Because of the stigma cheating carries, the decision to cheat can damage confidence and a sense of academic resilience. This can be avoided by situating the decision in its proper context: we are cheating because the system is designed to encourage it and produce it, and there is no reason why I should allow my energies – energies which could be spent organizing to dismantle these same systems – to be sucked away by a course I have no interest in and which has been placed in front of me purely as an obstacle to social and financial security. We liken this to some of what was discussed in our suggestion to *communicate the costs of penalization*: the student should know *why* the instructor refuses to play the role of an academic cop, just as the tutee should understand why cheating makes sense in certain contexts, and that they can own that decision instead of being ashamed for it.

Summary

We have explained how academic cheating is an inevitable product of the role of formal education; in particular, institutions operate on the credential-factory model partly in order to buttress myths of meritocracy and equality of opportunity on which the social and economic order relies. These myths are official mitigating excuses for life-or-death inequities, and students are subject to pressures that make cheating in the pursuit of credentials inevitable on a population basis. Part of the systemic function of educational institutions is to respond to cheating punitively (in other words, without penalizing cheating,

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[25]For example, the request not to look at the Stack Exchange post until after 90 minutes of independent thought, the request that the student use their own words to summarize the solution posted there, and the request to cite all sources used.

the institution would not be able to perform the function of reproducing the meritocracy and equality-of-opportunity myths).

We argued that penalization of cheating is dehumanising and pedagogically counterproductive (and unnecessary), and suggested several concrete steps the university-level mathematics educator can take to subvert it. We suggested that they start by interrogating their own internalised attitudes about "academic integrity", leading to the basic first step of ceasing to penalize cheating in their own classrooms. In order to effectively remove the implied threat of punishment, this must be communicated to students; since the cessation of penal teaching cannot be replaced by a vacuum, we have suggested some more nurturing pedagogical structures that respect students' needs and agency and challenge them in a way that is oriented toward their intellectual growth rather than the need to pick winners and losers. As part of communicating to students that theirs is not a penal classroom, students should be guided in confronting their own attitudes about competition and coercion.

We suggested that, in order to be sustainable and as widely effective as possible, the refusal to penalize cheating should be conducted on an organized basis, drawing in colleagues and taking advantage of existing collective structures. We emphasized the important role of graduate students in such organizing.

Finally, we discussed the prospect of helping members of one's community to cheat — in specific contexts and under certain conditions — emphasising the need to limit this to context where the community member is not one of one's own students. We emphasised that this is a valid course of action when the person being so helped is forced (via the prospect of denial of material resources, work, etc.) to gain a credential through studying material they have no desire to learn (so that, by helping them to cheat, one frees them from an instance of coercion).

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