The mathematics of politics.
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Where people in politics, when they refer to 'the math,' are
always referring to real numbers, they may be unaware of how
mathematicians are in a process of discovering that even in the
world of number theory, the Archimedian or Euclidean view needed
to be discarded long ago.

Although it is a little difficult, it is not impossible to perform
mathematics on a political issue.

First, let me give an example within Maths. When some time ago
it was discovered, as more-or-less conjectured by Burnside, that
all but finitely many finite simple groups arise by known
constructions, and that there are exactly 26 others which do not,
one can think: what happened next?

Did the seminar room empty at the moment the proof was accepted?
Did people rush into the streets saying "Finally we know what to do!"


To a mathematician, though, that is what it seems like, when the
world bank gives 30 days for someone to model a pipe injecting
chemicals into the Caribbean, and the person comes back with
his model, and suddenly, a few months later, people have rushed
out the door and constructed something strange.


Now, let's first try to make the group theory theorem a little
more relevant. What if, instead of groups, these had been
viruses. What if -- although this is impossible -- a team
of mathematicians had classified *all* *possible* viruses,
proved that there are no others.

Then, perhaps, if one knew vaccinations against all of these,
one could rush out the door and say, "We can now act
more freely, free of viral diseases."  Maybe this would
mean that people would be rushing out the door to kiss or make
love in unconstrained ways, or to lay in the dirt, or eat
untreated cheeses, finally, or some other thing that would
be too dangerous in the presence of unclassified viruses.

The fact that it is proven that there are *no other finite
models* of the theory of simple groups, in this setting,
would give people freedom to act in new ways, to do new
things.

Besides the impossibility of such an extensive
classification project, the real difficulty with an
extensive classification of pathogens -- of things
that might go wrong -- is that there is no division
of organisms like that, into the ones we need to save
versus the ones we need to destroy.

An example is tuberculosis in cattle. At one time, it
was written in a biography of Nixon that the reason
every single one if his many siblings perished in
childhood may be because the family cow may have
been infected with tuberculosis. Yet, recently,
just today, a paper says that a possible way of curing
bladder cancer is to inject a weakened form of the
tuberculosis bacterium into the bladder.

Vaccination is an accelerated exposure of the immune
system to things considered pathogens, which partly
compensates for technologically enhanced rates of
propogation of those pathogens.

The definition of viruses is not static, RNA viruses
have hypervariable genotype.

Everyone dies of something, everyone carries in the
body a huge store of viruses and bacteria.

I do not wish not to enter into a discussion of
types and probabilities of death or suffering at
various ages, but only to say that it is likely
that a very extensive discussion would reveal that
we cannot have any logical theory whose models are
the 'bad' viruses, or the 'bad' bacteria.

It will not work to start with nature, to interpret
it as a disjoint union of models, and, as mathematicians,
to try to come up with any theory which describes those
models which we should think to be pathogens.

What we can do is to take any particular theory, and to
interpret it mathematically.


Therefore let us begin, so we go to the news web site,
and choose a statement. In K-12 Economics we
wrote about the world bank, for no reason except
that the thinking about my marsh, about the hypoxia
map, about the surfactants at Quoddy, at Copake
falls and in the Bay of Fundy led to an investigation of
outfalls, and one of the prominent ones had been
initiated partly by the previous administration
of the world bank.


Let's look at today's statement by the current world
bank president, not because we wish to antagonize
or harrass anyone, but chosen more-or-less
at random, since it is a prominent statement.


"We're now five days away from a very dangerous moment....Inaction could result in interest rates
rising, confidence falling and growth slowing. If this comes to pass, it could be a disastrous event for
the developing world, and that will in turn greatly hurt developed economies as well."


Let us try now to approach the statement mathematically.

We interpret the statement as a sequence of logical axioms.
But we are not ridiculous about the syntax as Lewis Carroll
was in his syllogisms. We are generous and give all benefit of
doubt to meanings, interpreting them in the most sincere and
meaningful way that we can. But still being logical.

What this means is now, that we want to try to find a few ways
of making any sense whatsoever of these declarations.

We do not judge these ways we will find.


Let's start by looking up who is this person, Jim.


Since kindergarten, Jim lived on the Mississippi river, in Muscatine Iowa. Farmers
there, at least, near the river, leave half their land as biodiverse woods.
A one mile width around the river seems to be forbidden to development or farming,
because it is biodiverse. Beyond that, the road 32'nd street West seems to divide
the land.  To the east of that road it seems some farmers have intentionally left
some biodiverse woods among their fields.

No, looking closely, we have to correct that.

One sees wet areas that have not yet been drained, only.

Although we have not checked this, let's *assume* that the biodiverse
one mile wide strip around the Mississippi is a statutory area, not allowed
to be cleared, while the few little biodiverse areas elsewhere nearby
are biodiverse because they are wet areas, and had been difficult
for farmers to clear.

Everywhere else, for hundreds of miles around, is cleared monospecies
farmland.

As a mathematician  you are allowed to be an 'armchair
scientist,' to be lazy, not to go and find out the truth
of what he meant. You can look at all the possibilities
of what he meant by the 'developed' versus the 'developing'
economies. You can look at the mississippi river, and
surrounding little swamps, where he lived, where there is
some developing and developed land, and think, do the
statements he makes apply here?

Because he says, the danger is the 'slowing' of growth.
And it is hard to think of someplace where he is talking
about, and to think what he means by the growth, and what
he means by the growth slowing.

A pereson could be organized, and take a document with
various statements, and just as an exercise begin to
search for models of whatever is being said, or
possible models.

Not at all to be judgemental.

This generalizes the concept of irony, and the
discussion of some model may sound like an exercise in
deep irony.

But maybe what people call irony is really a special
case of a general mathematical approach to statements
which people make, which do not judge the statements,
but begin to visualize diverse models of what is said,
freely, and without prejudice.

What we are going to do is to interpet the Jim's statement
as a theory, and try to begin seeing if we can find any models.

We will work sincerely, not looking for ridiculous models, but looking
for ones which he might have himself had in his mind when he made those

Now let's advance further in Jim's biography a little.  Jim Yong Kim earned a
joint degree in anthropology and medicine, and has worked to
set up health care first in Haiti, then  in Africa with the World Health organization.

He was appointed president of the World Bank by Obama.

Now let's come up with some models for the theory which he has
posed in his statements.

One possibility is that he is making a political statement of some type
which we can't understand, because it is a political response to his
position, with respect to his appointment by Obama, or relative
to the politics of the current government shutdown. That is
one model.

Now let's add an assumption to the theory. Let's assume that he
is speaking about someting that is not political.

Then the first model is no longer a model of the theory.  Here
is a second model. He might be talking about something like
the health care he set up in Haiti, in Africa. Maybe the budget
that is getting delayed is one which includes things he still
needs for the healthcare programs he has set up, that
these are things which might depend on the US budget.

We are only choosing a model, so we are allowed to get as
specific as we like.

He might legitimately be thinking of medical supplies that need to be
delivered overseas. If these depend on money, maybe a delivery person
will show up at a warehouse, wanting to collect IV drips to bring them
to Haiti, or to collect retroviral medication for Africa.

We can envision his couriers, urgently on their mission to collect

medication, being  met at the warehouse door by an security guard,
who will say "Did you bring the money?"

"Since you did not bring the money, I will not allow you to take
any of this medication out of the warehouse!"

What will happen in the 'dangerous moment' during the next five days
with 'growth slowing.'

Without the money, a flow is interrupted. Here, the flow of money would
represent a flow of medical care, and interrupting it would be
as disastrous as someone barging into a hospital and interrupting
the IV drip of a patient.

So in this model, the 'dangerous moment' which he refers to could be
the moment when the flow of medications to Haiti and Africa is interrupted
when the budget was cut, and urgently needing to be restored, because
actual real people are going to be ill, are going to suffer an die.

Now, let's look at the model we're converging on. We see that it is
not a model of his theory.

Because, he says,

".....growth slowing. If this  comes to pass, it could be a disastrous event...."

Is that how we should understand why "growth slowing" over the next five days
would be a "disastrous event."


If it is the result of 'growth slowing,' the disastrous event cannot be what occurs
at the moment the courier arrives at the medicine warehouse, wanting to collect
the medicine, but not able to pay for it.

The disastrous event actually *is* the slowing of growth, in the theory.

We need to start finding models where the axiom is true.

The theory says,

" If this  comes to pass, it could be a disastrous event for the
developing world, and that will in turn greatly hurt developed
economies as well."


He really is referring to particular developing countries, I think,
but he says economies.

Let's be a little adventurous and intentionally lazy, in a vague hope that
intentions are formed in childhood. Let's go back to the biography to find
at least one possible model.

This means, we have to consider the various areas of  his home town of
Muscatine, to find those which are developed and those which are developing.


There is both part of the developed world,  and part of the developing world, in
Muscatine. The developed world is all the farms which occupy all the land for
miles and miles around, with two exceptions.

One exception is the one mile statutory strip along the river. This is neither
developed nor developing, it is protected.

The other is the little tree-like  structure  of swampy land to the east of 32'nd
street West. Though it is a tiny amount of biodiverse land, it is almost
certainly developing, as farmers shall find ways of filling it in.

I wonder if Jim had experiences here, if his thoughts and feelings were influenced
or formed here. I wonder if he had many friends. His mom and dad came from Korea.
 I wonder if he was accepted by the other kids, and more importantly if he
was allowed to play with other kids there, in those biodiverse woods.


What he actually says is an ethical argument. He says, growth slowing would
be a disastrous event for the developing world, and that will in turn greatly
hurt the  developed world.

Let's then apply the statement here in the Muscatine model. It is
equivalent to the statement:

> Slowing down the growth of the area of farmland during the next five days will be a disastrous event
> for the few acres of remaining biodiverse land. The disaster will propogate to all the hundreds of
> miles of monospecies farmland round about.


Now, the statement seems absurd, and one is at the point of thinking
that the Muscatine model, that his hometown, is not a model of his
theory.

We already considered a model where particular government budgets
relate to flows of medical supplies to Haiti or Africa.

It would be nice to have another model which, like this one, is not
dependent on Jim's experiences as a doctor, so even though things
are a little silly, unintentionally, let us proceed further with the search
for this second model.

Admittedly, here, I am perhaps more talking about my own
childhood experiences, not anything to do with foreign countries
or theories of development, but actually it does not matter what is
the substance of a model.

(Analyzing a model is a logical exercise only, equivalent to what
Lewis Carroll did, and nearly equally ridiculous. What one is trying to
do here is to be less ridiculous, and it is unfortunate that some
silliness does get forced at times.)

If Jim and his little friends, in first or second grade, had a little boat
there, knowing that in one year there will only be a farmer's field,
which would be the dangerous moment?

Let's imagine someone, an official, coming to his mom and
dad's house,  came to his house, knocking on the door to
make an announcement. What would the announcement be?

It would have to be,

"We have terrible news. Unless you act within five days, instead of
being gone in one year, your little swamp will have a five day
respite, and it will be gone in one year and five days."

When would the  disastrous event take place? It might take place during
the five day respite, when him and his friends can play as usual in the swamp,
as they always have done already, for the extra five days.

Or it might take place at the time of the clearance of the swamp, this
permanent change occurring for the first time in history, being intrinsically
disastrous because of  the late day  upon which it happens.

The notion of what might be the disaster is not difficult to find if it is
not required to be a disaster happening either to the swamp or to Jim
and his little friends.

Maybe, although there are  millions of farmers with fields there, each
adjacent to the next, for hundreds of miles in every direction, the particular
farmer whose land is close to the Mississippi, but not close enough
to be in the statutory protected strip, has a special important need to clear
the wet area of his land.  Maybe he needs to buy medicine.

During the extra five days, when Jim and his friends would be
enjoying the swamp as they always have done since the beginning
of their memory, they would be enjoying the swamp only for
a reason which had independently also caused a medical tragedy.

This medical tragedy could only have been a double coincidence.
Of all the farmers, hundreds of miles in every direction, it must have only
happened to afflict the one who has some uncleared land still.
And must have only afflicted him now, the first time ever the new
technology is here which gives him the power to fill and clear
his land.

Just at the exact time and place when it is finally possible
for one of the last farmers with some uncleared land, to clear
that land, he has been also struck down by a terrible illness.

It is a triple coincidence, really. That the farmer who happens
to have some uncleared land, just at the very moment that
particular farmer is struck down by illness, is not only the
first moment when new technology gives him the power to clear
his land, it is at the very same moment that the budget
delay frustrates this possibility. That is, it is a coincidence
of four events, which is a triple coincidence then.

During that five days when Jim and  his little friends may
believe that they have innocently been granted a little respite
from the permanent end of the life they have known, the death of the
little place they love to play,  it turns out, that, because of
the terrible triple coincidence, the cause of their respite,
while benificent and magnanamous to them, is also cruel
to the farmer.

By the terrible triple coincidence, the illness struck the
very farmer who has some land which could be cleared for the
first time ever. It struck him exactly during the very first five days
that technology unprecedented in history suddenly appeared, giving
him the power to clear it, and it struck him exactly during the five days
when the US budget is delayed.

So while Jim and his friends if not notified would be innocently
unaware of the reason for their five day reprieve in nature,
they need to be informed that the same event which caused
their reprieve -- the five day delay -- is also, by this terrible
triple coincidence, also causing a tragedy. It is delaying the
medical treatment of this terrible illness which has so suddenly
and coincidentally afflicted this one farmer, at this crucial
time when he can profit just enough to relieve his terrible malady.

The 'inaction' and the slowing of growth of the cleared
area of his farm, now must comprise a 'disastrous event.'

And it is not only disastrous for him, it 'greatly harms'
the developed world, meaning, all the other farmers for
hundreds of miles in every direction who have already
completely cleared their land.

So that when Jim and his friends are walking home, maybe
a little dejected they might be, though this does not matter,
after the permanent loss of their little lifestyle, when they *do*
get into the clattering array of tarmac and lawns, of mowed
and cultivated fields, they find finally that their respite would
have been better never to have been allowed. It is at the
expense of great hurt.

There are no people in the farms round about, only machinery
such as combine harvesters, but they have  been damaged.
Perhaps the one farmer became angry or disabled due to the
five day delay in starting his more intensive agriculture, delayed
by the budget at the exact moment it would have been enabled
by tehcnological advance, once he learned that he would have
needed the money earlier to show up at a pharmacy and obtain
medication needed at that moment to have prevented his disability.

Perhaps, in a rage, he rushes into one of the cleared farmers'
fields and punches the cab of a combine harvester, which is polished
and painted, but not insured against any cosmetic damage or worse
damage.

And this means it would remain unrepaired, and Jim and his
little friends ought to be ashamed of themselves for enjoying
their lives as they had been, not realizing that if they had curtailed
their lives five days earlier, if they had somehow been able to refuse
the gift of living nature which had been offered, and if their refusal
could have propogated backwards through causality, and reversed
the budget cut, and thereby replaced the triple coincidence with only
a double coincidence, whereby the one farmer with wetlands to
clear would be able to clear his land, grow a crop, and use the money
to purchase his medication needed at that moment without any budget delay
hindering him, they would not have needed to spend the a later part of
their lives occasionally seeing an  unrepaired dent in the combine
harvester belonging to one of the cleared fields.

This choice of model, whicih I made, likely just shows the extent to which
I don't yet understand why he talked about growth and disaster instead
of just saying either that he wants to support Obama's position or that
some of the budget cuts are going to hurt his humanitarian work.

It is an arbitrary model, and cannot spur one to action. It is a
model of Jim's theory which comes from how my own childhood had
been, only.

If a model which I make is not the same as a model which may be
in Jim's mind, that would mean that I don't understand how to
interpret what he actually says. The process of sorting
through models, if it is done mathematically, is almost a sort
of idle daydreaming, though it is a rigorous activity.

Another type of model is a trivial model. A model where
every statement is uncritically true.

Such a model would apply even if it were the case that when someone
is appointed head of the world bank, whoever they were before, they
have  to turn themselves  into a robot  saying that slowing down
of growth would be a 'disaster' and would 'hurt'  without really
meaning what they are saying.