From: Noam Chomsky [redacted]
Sent: Tuesday, June 9, 2015 1:59 AM
To: jeffrey E.
Subject: RE: Re:

1. I haven't studied the hyperbolic groups that Gromov devised, and have only limited familiarity with the hyperbolic geometry developed in the 19th century. But I don't see what it says about matrices not being mathematical objects, and don't even know what that would mean. All of this is mathematics.

2. It's not that boundaries are the result of mechanisms. Rather, boundaries of the kind you mention gain significance when we are studying mechanisms. I don't see how they bear on the general architectural issues of input-output-central, though the might be suggestive analogues for the inquiry into rule systems inaccessible to consciousness. Seems to me a Marr-type distinction between computational, algorithmic, and mechanical level.

3. True enough, but I don't see how it bears on the subsystems of recursive function theory under investigation here, though would be glad to learn how

I think I may have mentioned to you Massimo Piattelli's work on language jointly with several quantum physicists at U Arizona. Something you might want to look into.

Noam

From: jeffrey E. [mailto:jeevacation@gmail.com]
Sent: Monday, June 08, 2015 9:46 PM
To: Noam Chomsky
Subject: Re: Re:

Mikhail Leonidovich Gromov , a good example. , definitive on matrix not being a mathematical object . probably the best thinker in the math field. like you he created a new field of study . - hyperbolic geometry,

2. no-! boundarys are not as a result of mechanisms. it defines a limit to the "what " , and everything else. .

3. quantum probablility distributions can be described as a shape that appears to have a restoring force. pushing things towards the mean. a similar human created pseudo force like centripetal force. wholly dependent on ones reference frame.

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On Mon, Jun 8, 2015 at 9:32 PM, Noam Chomsky <chomsky@mit.edu <mailto:chomsky@mit.edu> > wrote:

Don't follow. Matrices are mathematical objects, and sets of matrices are sometimes very interesting mathematical objects, will studied in math and physics. They very definite mathematical meaning within the axiom systems of matrix algebra, etc. Apart from such systems, no mathematical objects have mathematical meaning.

I presume I'm missing your point. What mathematicians do you have in mind?

Noam

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Monday, June 08, 2015 5:16 AM
To: Noam Chomsky
Subject: Re: Re:

I'd look at it somewhat differently. Mathematics, as I understand it, includes all of the formal apparatuses. Anything formalizable falls within mathematics – sometimes, rarely, interesting from a mathematical point of view, but that's a separate matter.

Exactly, I had the same mistaken strong view . Now the best mathematicians all agree that both of us were incorrect.

take for ex a Matrix - it is not a mathematical object. it has no mathematical meaning. it is a notation that allows a calculation on the blackboard .

On Mon, Jun 8, 2015 at 1:17 AM, Noam Chomsky <chomsky@mit.edu <mailto:chomsky@mit.edu> > wrote:

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Sunday, June 07, 2015 2:07 PM
To: Noam Chomsky
Subject: Re: Re:

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1. first deficiency - .input output modules in general ignore the membrane .. The membrane is its own complex system . (membrane computing alone is a brand new subject.)

That might turn out to be a problem in the neurological analysis of input-output-central modules, one of many. Fundamental problems are those that I mentioned to you in connection with Randy Gallistel's critique: the inability of neural net models to capture the core component of any computational system, as we've known since Turing. But at the level of this discussion, the questions don't arise. Whatever the mechanisms may be, they will have to deal with the general architecture of input-output-central systems. It's a little reminiscent of David Marr's three levels. Here we are at the computational level, not the level of implementation.

2. Mathematics is just one member of the collection of formal apparatus s . It often is confusing as it lends itself too easily to be mistaken for a metric.

I'd look at it somewhat differently. Mathematics, as I understand it, includes all of the formal apparatuses. Anything formalizable falls within mathematics – sometimes, rarely, interesting from a mathematical point of view, but that's a separate matter.

2. what I think you will find intriguing is that the arrows in cat theory somewhat formalizes what Kant meant when he referred to as principles. the mathematics was not available to him.

Would be interested in hearing more, but right now don't see it.

3. you did not comment on the fact that the wealthy get given a deduction with the right hand , and taken away with the left hand (pun intended).

Correct. I don't yet understand the specific details, including the distributional effects of the factors you've mentioned, which surely do raise interesting questions I hadn't thought of or seen in the literature.

4 I look forward to both being enlightened and doing my best to bring you a new tool.

Same here.

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On Sun, Jun 7, 2015 at 1:47 PM, Noam Chomsky <[redacted]> wrote:

Could be, and I'll be glad to be enlightened.

Input-output-central modules seem to me facts about the organism, like a visual system and the enteric nervous system (which I've written about now and them). It's imagine that some more abstract way of looking at things would yield insights that can applied in these domains. Actually I've been involved in such efforts, years ago, some of it jointly with the late M.P. Schutzenberger, a very good mathematician (connections of automata theory with theory of monoids and real variables). And some of this work was picked up by category theorists, but I didn't follow it from there because what already seemed to be pretty remote from the empirical phenomena of language (though interesting mathematically) was becoming hopelessly remote.

Noam

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Saturday, June 06, 2015 7:59 PM
To: Noam Chomsky
Subject: Re: Re:

how does one assign a "value " to money? is it any different? 2. probablities and cat theory . allow abstractions- such as morphism of shapes which are free of the input output module formulations. and algebra, . I guess you could say topology vs typology)::. I propose that one of the reasons you do not yet see its benefits are more the shortcomings of my brief explanations than those of the theory.

On Sat, Jun 6, 2015 at 7:12 PM, Noam Chomsky <[redacted]
<[redacted]wrote:

Thinking about it, but I don't see how once can assign a value to a sentence (token or type or looked at even more abstractly, say the proposition expressed) in isolation from contexts, and value will vary all over the map as contexts vary. Take the standard example "the cat is on the mat," typically valueless, but not if the information conveyed is a signal to set off nuclear weapons that will destroy the world. Generalizes.

On 3, there is a place for probabilities in the study of use of language (e.g., Charles Yang's integration of UG and learning theory in study of acquisition), but there is no indication of how they might enter into I-language. The concepts don't seem relevant.

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As for category theory, it makes sense to appeal to it if the results obtained at this level of abstraction have implications for the particular system under investigation. I don't see how it would be true in this case. Would we, say, learn more about the roots and implications of the copy theory of displacement if we abstracted to category theory? I don't see how.

I'll ask Valeria if she's gotten the book yet. Sounds like a great evening.

Noam

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Saturday, June 06, 2015 3:45 AM
To: Noam Chomsky
Subject: Re:

1. the terms - value , money ,and currency- need definition. separate and apart from an intrinsic worth to an individual , the hungry one . or the Indian tooth manufacturer, either can actually be consumed or merely stand as a store of value or medium of exchange. a piece of paper representing either is the familiar form of money, . a dollar bill. . as you know the US version used to say the convertible into something. (gold silver) . now it says trust me. its worth one dollar. . the trading of dollars is well known. I wondered whether sentences (concepts without being necessarily written on paper. could be , looked at the same way. some having intrinsic value and others being used as exchange. I see no reason why not, does that set up an economics of sentences /concepts. .

2 Of course I would love to talk to your friend

3. With nothing more meaningful than sharing a new tasty food with you that I have enjoyed.I think you might enjoy the taste of a new math.

I read your attached paper. I would suggest that the system of analysis suffers from the use of early twentieth century reasoning , ie references to Merge. minimal computation (the set notation can be misleading) or modules. I think a system and notation that might , just might, help and add interesting insights is - category theory. fresher, more useful then either the former popular set theory or group theory of the 20th century . where for example mc would be contained in a larger category. (your Merge would fall into a subcategory of operations that were a combination of associative , transitive operations in a space etc . One then looks at the spaces of probabilities and realizes that some are just much more probable than others . nothing more. these probabilities generate shapes only as a result of their statistical ensembles. - the age old study of soap bubbles suffered from the same handicap. . the shapes were analyzed by attempting to follow the mc rule. ie containing the most volume for the least area. (a broader category) now i would propose that the shape merely represents its most probable shape- nothing more. given the statistical space. for ex, things on the membrane , free to move but the shape not changing. I understand that language is not an input output system like vision. Shapes are not input /output devices but have very strong properties , relationships etc. there are mappings onto those spaces. the old version of functions expanded ei using more than only mathematical terms. mappings are not required to be linear. ie grammatical sentences would be represented as coherent shapes. its very beautiful math.

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Had dinner with woody and he wanted to know if valeria had gotten the book he suggested as in hindsight thought that he should have sent her a copy and not merely forwarded the title. my side still hurts from laughing for the past 2 hours.

On Sat, Jun 6, 2015 at 12:36 AM, Noam Chomsky <chomsky2@mit.edu <mailto:chomsky2@mit.edu> > wrote:

If I understand what you're saying, I agree. If I want to buy something, the gold is more valuable (thanks to conventions of the social order). If I'm hungry, the food has higher value than the gold (independent of such conventions). But I'm not sure I see what follows.

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Friday, June 05, 2015 8:44 AM
To: Jeffrey Epstein; Noam Chomsky
Subject:

there is gold in the refrigerator. there is food in the refriegerator. . , 1 . does either the physical gold or food have more intrinsic value.? . depends . is the value the same to both owner and , consumer.? depends, need , time frame ? if so how does one calculate it. what if there is more than two players. 2 exchangability (first order derivative) not the thing itself but what one can do with it. - it depends 3. the piece of pape or hunk of useless metal that "states" there is gold in the fridg ? is that money. ?you get the idea does there have to be actual gold in the fridge for it to be accepeted by others of something of "value". (depends on trust and belief system). yesterdays question - If the sentence " there is gold in the fridge " is either spoken or written . does that change its value? . buyer, seller, trust ,belief system ?

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