From: Noam Chomsky <[redacted]>
Sent: Wednesday, June 10, 2015 4:35 PM
To: jeffrey E.
Subject: RE: Re:

Found a few minutes to start plowing through masses of mail. Much too brief. Things we'll have to talk about. But some thought below and then for later messages.

Noam

From: jeffrey E. [mailto:jeevacation@gmail.com]
Sent: Tuesday, June 09, 2015 9:52 AM
To: Noam Chomsky
Subject: Re: Re:

As Always everything written by me to you should be seen alongside a smile and twinkle . expressing my enjoyment

Same here

you engage in slippery definitions.

Glad to try to sharpen them if you can direct me to them.

. I suggested the gromov desciiption on pg 26, on his view regarding the math since the 1960s?

Don't see the problem. I read the description. It's doubtless important work, and mathematicians pay attention to it under the conditions I mentioned, which don't apply in the present case.

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. If you can help me understand then what you mean by" language "at least in our dialogue.

By "language" I mean I-language, a biological object, as discussed in the papers I sent you (and in much closer detail in technical papers that I didn't send).

. I thought we had agreed to separate it from communication. sound wave analysis. etc.

That's what I've been arguing for many years, in virtual isolation, as discussed in those papers.

why is the waggle dance a study of a living system more than say written directions is a study of humans. Im unclear.

Not sure why you brought up the waggle dance. I referred to the computational system of insect navigation, a different matter. The waggle dance is surely a living system. Don't see what written directions have to do with our discussion.

by marrs method i assume you mean

Computation : like scaling down, when speakers of a given language variety have a choice between two or more denotatively equivalent forms of expression, are there computational or mathematical principles (i.e. about the goals that language can, often, or always is achieving) that predict why speakers exhibit the gradient preferences that they do?

Algorithmic: How does human language generally, a specific language, or a specific speaker achieve some of these abstract goals?

Implementation and How might (and are) these algorithms and representations be implemented in the brain?

More or less. I was referring to Marr's work which established a large part of the modern study of vision, and extends to input modules like vision more generally: the computational level formulates the problem to be solved (e.g., the rigidity case); the algorithm formulates the way it is solved (e.g., Ullman's algorithm for rigidity); the neurological level identifies the actual mechanisms (mostly a mystery, even for insects, though sometimes there are breakthroughs, like a recent study of drosophila navigation that did reach the implementation level).

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not sure any new insights greater than your UG was achieved after many attempts .

In the case of vision, quite a lot. And some other areas.

I will now read recursive function work.

On Tue, Jun 9, 2015 at 9:28 AM, Noam Chomsky <[redacted]> wrote:

Sorry, but I don't follow. Insect navigation is a study of a living system, and the work that I'm familiar with studies it as a computational system. If there's a better way of analyzing it, well and good: the scientists working on the topic would be glad to see it. Outside observers like me too.

At another level of analysis, insect navigation is a sensory-motor process in physical space.

There's no semantic error that I'm aware of. Studying systems at various levels of abstraction has been standard science for centuries. A particular framework that's been widely adopted in the cognitive sciences is Marr's, but other ways of looking at it are of course possible.

I looked at Gromov's paper, but didn't read it carefully. He uses set theory freely throughout, and I don't see anything that bears on matrices as mathematical objects or on the use of recursive function theory for computational systems like language where it is appropriate. Maybe, as he suggests, some results would follow from studying these topics in the framework he develops, but as always, that has to be shown. For example, Eilenberg's category-theoretic reanalysis of work on finite automata that I and others had done, including very good and respected mathematician's like Schutzenberger, apparently had some mathematical interest (so I am told), but no results were suggested that had any implications for the empirical objects that originally motivated the mathematical studies. That's not unusual in math and the physical sciences.

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Tuesday, June 09, 2015 7:10 AM
To: Noam Chomsky
Subject: Re: Re:

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thats cheating . . Is the study of how it dances really a study of the living systen? or is merely the sensory motor display in phyiscal space. if you admit it being the latter , my dismal knowledge of language requires the expert to suggest , was the mistake a "semantic error' ? haha.. 2. the bee takes the space time vector and using poloarization and other inputs, to merely express in in other domains its result. a phenomenological trivial event. wouldnt pointing and saying" over there". be as trivial . if you do point and speak , isn't that a merging of the" two" languages . neither concatenation or distance . ??

I attach a gromov paper. his apology to the reader on page 26 , i think elegantly explains some of the new difficulties.

On Tue, Jun 9, 2015 at 12:49 AM, Noam Chomsky [redacted] > > wrote:

It's quite true that computer modelling of living systems is often misused, but it's often used quite effectively. In the case of language, what has been used effectively is the theory of computability-recursive function theory, which provides basic and appropriate tools. It's also been used effectively to study insect navigation and much else.

I wonder if the nuzanmirre is still around.

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Monday, June 08, 2015 10:57 PM
To: Noam Chomsky
Subject: Re: Re:

This all needs exposition. sorry. the computer model for living systems has not led to many conherent theories. it does gets misued all the time however, . the simplest of questions , why does a cell have a

symmetrical shape. extremely complex computations were attempted . did the lipids attract. ? if so with what force. ? did the area need to enclose the greatest volume. . we now know that it is nothing more than the most probable shape , given the statistical ensemble available to it. nothing more. . quantum would attempt to explain it by suggesting the moleucules took every shape they could and decided on the spherical one. . I smile everytime I think of your perception that there was a magazine called nuzanmirrer.

On Mon, Jun 8, 2015 at 10:17 PM, Noam Chomsky <[redacted]> wrote:

It's absolutely true that for study of choice of action, the computer model is not helpful at all. That's something I've been arguing for many decades, in opposition to most physicists these days, who claim that choice of action reduces to determinacy and randomness (i.e., programmable). I think it may have come up in the Krauss discussion. I also discussed it again in my Dewey lectures in the J. of Philosophy in December 2013.

I don't frankly see how the Schrodinger analogy helps in this case.

To clarify, the people I mentioned weren't students working on computers. Rather, professional mathematicians and physicists. The two who have been attending seminars for many years, and have published in areas very closely related to my work, are a mathematician and quantum physicist at Northeastern.

Noam

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Monday, June 08, 2015 9:57 PM
To: Noam Chomsky
Subject: Re:

brain as a computer? as silly as artificial intelligence., The simple example I teach re quantum is when i try to decide should i order fish or meat. for the moment before I order (as you an I agree ms before i even am concious of ordering.) both choices like schroedingers cat exist as a superpostioned wave function that collapses and a choice is made. . yes i am taking liberties. . the students you referred to you suggest are working on computers, not very odd that they might see you I language conforming to their pre perceptions

On Mon, Jun 8, 2015 at 9:41 PM, Noam Chomsky <[redacted]
<mailto:[redacted]> > wrote:

I have a VERY thick skin, and love to hear criticism. One of the best ways to learn. And I've often given up closely held beliefs on the basis of persuasive argumentation. But in this case, I just don't see the arguments.

It's true that the mathematics lacks rigor, but that's for the same reason that publications in professional math journals lack rigor. The steps that are not spelled out are straightforward enough so that they can be easily filled in. I don't know of any problems about set theory, apart from the classic ones. Some version of set theory is presupposed in every branch of math, including category theory. As for the brain as a computer, I'm not sure what you see as the problem. The papers I sent you do assume that I-language is a computational system, with the properties mentioned, easily formalized. I don't know of any coherent alternative. Actually, very good professional mathematicians and physicists, one working primarily on quantum computers, have attended my regular seminars for years, but I've never heard a suggestion as to how mathematical ideas used in quantum theory would be relevant to systems of the kind we're considering. The "displacement conjecture" is, in fact, an immediate consequence of what would be the best possible theory if it's true: SMT, in particular, the assumption that the basic combinatorial operation is the simplest one possible. Merge is simply set-formation, presupposed in all of mathematics. I agree that it's naïve, if by that you mean very simple, arguably optimally so. But hasn't that been the pretty explicit goal of science, at least since Galileo, quantum theory included? I'd like to hear the objections, and hope to learn from them.

Noam

From: jeffrey E. [mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>]
Sent: Monday, June 08, 2015 3:07 PM
To: Noam Chomsky
Subject:

I will take your word that you share my thick skin for criticism and share a strange pleasure in learning, even if it means having to accept that some formerly closely held beliefs might need strong correction. I have no particular knowledge re politics or history, so I will never offer an opinion. however re mathematics and or money , I feel on strong ground. That being said, thought puzzles in the paper are brilliant and insightful. the mathematical descriptions lack rigor , and the metaphors suffer from the common science limitation of trying to describe things using the engineering metaphors or the tools of the moment.ex. The human or its brain as a computer ., set theory . It was popular in the early 20th as you know to describe the body as an electric machine.. the mathematics used today in quantum show more promise , as it attempts to describe things that appear counter intuitive. or difficult to comprehend , (your displacement conjecture) your simple X and Y , Merge , is quite naive and unfortunately incorrect.

.

2. from the paper you sent. ; a much more elegant way of conveying what i had failed to do re sentences and money

European structuralism commonly adopted the Saussurean conception of language (MONEY) (in the relevant sense) as a social entity; as Saussure put it, a storehouse of word images (values) in the brains of a collectivity of individuals founded on a "sort of contract."

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