I HAVE BEEN DEVELOPING A METHOD TO USE THE COMPUTER TO GAIN INSIGHT INTO COMPLEX SOCIAL-POLITICAL PROBLEMS

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I have been developing a method for a number of years and now have a computer program that allows us to pose a problem in small pieces, the dots, and use the computer to help us connect these dots to understand their implications. The use of a computer program will help us far surpass our unaided abilities. One such method and the program to implement it are called the Explainer.

Let's look at how the Explainer can be used.

People with various perspectives on the problem collaborate to propose and discuss the cause-and-effects that underlie the problem. Each of these individual cause-and-effect statements, i.e. the dots, may be quite simple by itself. But the implications of all these statements taken together may be far beyond our comprehension. The Explainer helps us connect these dots to find their implications.

Given a behavior to be explained, the Explainer works backward through the cause-and-effects to find the various plausible explanations for that behavior. Explanations are composed of combinations of assumptions joined by ANDs, ORs, and NOTs. An assumption is a cause that has no further cause.

The Explainer then uses the cause-and-effects to find for each plausible explanation all the behaviors that it would predict. But some of these explanations may predict behaviors that can be shown not to occur. So the predictions of each explanation must be tested and the explanation rejected if its predictions can be shown not to occur.

For each explanation, the Explainer provides the scenario of cause-and-effects that it used to come to its conclusions. When the Explainer does not perform well at explaining behaviors, these scenarios can be used to improve the cause-and-effects. This is a continuing trial and error process of improvement until settling on a set of cause-and-effects that appear to adequately lend insight into the intended problems.

The Explainer has been used to study such problems as trying to understand the causes of the economic crisis and widening wealth gap. But so far, this analysis has already required dealing with over thirty interconnected aspects of the problem and required using nearly twenty levels of logical reasoning. This is far beyond the capabilities of our unaided minds.

A preliminary conclusion is:

Market Collapse is:
CAUSED BY Borrower has low income and low equity
AND Nature of ARMs
AND NOT Regulators guarantee symmetry of information about loan risks

Using the Explainer does not necessarily provide a solution. But by being able to consider more aspects of the problem and their interactions, it can provide better insights than might otherwise be possible. By using these insights, it may be possible to produce suggestions for resolving the problem that might not otherwise have been considered. These suggestions may deserve further consideration.

The Explainer can be used in several ways. By finding the assumptions that would cause a desired behavior, the assumptions can be turned into actions to produce that behavior. Sometimes we may wish to express a behavior directly in terms of the assumptions that cause that behavior without being concerned about all the steps involved in tracing through the intermediate cause-and-effects. Other times, as in developing arguments to support certain actions, we may wish to see the traces through all the intermediate cause-and-effects.

The Explainer can be used to establish whether something is true or false. If it shows a line of reasoning that leads to something being true and another line leading to concluding that it is false, we must conclude that this is a contradiction indicating the problem has been improperly formulated.

But it can also be used to work with mechanisms that indicate whether the value of a variable will increase or decrease. It is possible for one mechanism to cause a value to increase and another to cause the same variable to decrease. This is not a contradiction. A mechanism can tell us whether an action has a desired or undesired effect or whether the effect may have both desired and undesired consequences.

Many significant problems involve circuits in the cause-and-effects. If A causes B, B causes C, and C causes A, this would be a circuit. Understanding circuits can be vital to understanding many problems. But we are not very good at handling problems with circuits by ourselves.

As an example of a simplistic problem involving a circuit, let us assert the following assumptions to determine the implications if the assumptions were correct.

1. Big businesses have accumulated hoards of cash by using automation to reduce their payrolls. 2. Big businesses are disinclined to invest this cash in small businesses because they do not consider that such investments would be profitable. 3. They do not consider these investments would be profitable because many of these small businesses are not currently profitable. 4. Some of these small businesses are not currently profitable because they are in need of investments. 2, 3 and 4 form a circuit that is driven by 1.

Circuits can often spiral in either of two directions depending on how they are driven. As it stands, this circuit tends to spiral down. But could the government do anything to make it spiral up? This is a useful question to consider because if it were to spiral up, it could stimulate the economy at little or no cost to the taxpayer.

Perhaps the government could provide a tax advantage to big companies that invest in smaller businesses that could become profitable if they had the investments they needed. The government may be able to recoup its cost of this tax relief by the additional taxes it collects

from the newly successful small businesses. At this point, this is just idea, but perhaps worth further investigation. This is an example of the suggestions the Explainer might propose.