



DARON
ACEMOGLU



VICTOR
CHERNOZHUKOV



MUHAMET
YILDIZ

Explaining the Persistence of Disagreement in Bargaining

Daron Acemoglu, Ph.D.
Charles P. Kindleberger Professor of Applied Economics

Victor Chernozhukov, Ph.D.
Associate Professor of Economics

Muhamet Yildiz, Ph.D.
Pentti J.K. Kouri Career Development Associate Professor of Economics

Economic transactions are frequently characterized by disagreements between the participants. The buyer and seller of a common stock typically disagree either about the future prospects for the company it represents or about the returns available from alternative investments. The various bidders in a spectrum auction, or in an auction for timber or oil and gas rights, disagree about the potential profit opportunities from exploiting these resources. Explaining disagreement is therefore an essential component in most economic models of decision-making and market interaction. Nearly all existing models assume that individuals have consistent beliefs about their economic environment and about the nature of the payoffs from each decision they might make. In any actual decision, different actors may have different information about the specific payoffs in question. This may lead them to different decisions. Hypothetically, however, if they all had access to the same information, and if the information set included a large amount of data on

the relevant payoffs, then their evaluation of the alternative choices would converge. This is the meaning of consistency in decision-making models. Consistency is often justified by noting that common experiences and observations will eliminate major disagreements about the economic environment and the nature of various payoffs, even if specific disagreements about payoffs might occur in the presence of limited information.



In a new paper on “Learning and Disagreement in an Uncertain World,” Daron Acemoglu, Victor Chernozhukov, and Muhamet Yildiz challenge the standard wisdom about consistency in decision-making. They suggest that in many practical settings, disagreement is not due to access to different and limited information sets, but to different views about the interpretation of the same evidence. This is illustrated within the field of economic policy-making, where there are often sharp differences of viewpoint among economists studying the appropriate role of monetary policy or the behavioral impacts of tax changes. It can be illustrated even more clearly by considering decision-making in fields such as foreign policy. Consider the disagreement among intelligence experts who were asked to assess whether Iraq did or did not possess weapons

MIT DEPARTMENT

OF ECONOMICS

E52-391

50 MEMORIAL DRIVE

CAMBRIDGE MA 02142-1347

[HTTP://ECON-WWW.MIT.EDU/](http://econ-www.mit.edu/)

of mass destruction. Disagreements among these experts cannot, in most cases, be explained by access to different information: they stem from differences of interpretation.

The authors show that such disagreements arise naturally when individuals are uncertain about the quality of the data they receive. In such an environment, those with a particular view are more likely to interpret information that is not consistent with their prior beliefs as biased and uninformative. Imagine a situation in which an individual suspects that news reports and strategic intelligence may be biased. If she reads a report suggesting the existence of weapons of mass destruction in Iraq, but her prior beliefs suggest that there are none, then she is likely to interpret the report as biased. In contrast, another individual whose prior beliefs suggest the presence of such weapons will interpret the same report as an accurate source of data that supports her view—and will update her beliefs accordingly. This type of behavior leads to persistent disagreement even when a large amount of information becomes available over time.

Persistent disagreement is an important discovery, but there are other significant findings in this study. One, which is somewhat counterintuitive, is that it is possible for rational individuals to disagree more after they both receive new, identical information than before such information is revealed. This is because each individual processes the additional information through the filter of his own prior beliefs. When uncertainty about message quality leads one individual to dismiss information that the other views as supportive,

the arrival of new information can cause the views of different decision-makers to diverge. A corollary of this finding is that even when the amount of data available to decision-makers becomes very large, there may still be persistent disagreement. This finding stands in stark contrast to the usual presumption that as the amount of information available to decision-makers becomes extremely large, their views about the appropriate decision must converge.

Acemoglu, Chernozhukov, and Yildiz' model of persistent disagreement is an example of the type of fundamental research carried out by MIT economists. This work may ultimately find application in a wide variety of economic settings. It may be able to explain the large volume of trade in financial markets, even though most traders share similar information sets. It may also help to explain the timing of transactions in financial markets and elsewhere. In standard models when data and news reports are viewed as completely accurate and informative, even if two individuals originally disagree about the value of an asset, they recognize that they will learn equally from the arrival of new information over time. In light of this, they trade immediately because neither will derive any advantage from waiting. When traders are learning under uncertainty, however, each understands that they may interpret signals differently from their trading partners. Each may therefore perceive an advantage to delaying trade. When differences in prior beliefs are very large, the volume of trade may be very low precisely because of such disparities across traders in their views about the value of additional information.



To download a full-length version of this research paper, please visit <http://econ-www.mit.edu/files/223>.

For further information about the current research activities of the MIT Economics Department, please contact Professor James Poterba, Mitsui Professor and Department Head, at poterba@mit.edu or (617) 253 6673.