When Does Conscious Parallelism Become An Agreement

By: Douglas E. Rosenthal

The Conference Board

2007 Antitrust Conference

March 1, 2007

Introduction

This issue may be addressed in the appeal from Twombly et al. v. Bell Atlantic et al., 425 F.3d 99 (2d. Cir. 2005) briefed, argued and submitted to the Supreme Court in November 2006. No decision yet as of February 15, 2007.

1. **Is parallel pricing by competitors evidence of a price fixing agreement? The standard reflected in much of the case law is some variation of the following:** only if there is no plausible possibility of independent action.
2. **Judge Posner states a stricter standard for the inference of conspiracy in In re High Fructose Corn Syrup Antitrust Litigation 295 F.3d 651 (7th Cir. 2002).**

3. See the attached colloquy between Justice Breyer and counsel for respondents at oral argument — unlawful conscious parallelism will not, I expect, be found by the Supreme Court in a pattern of oligopoly pricing alone.
4. What guidance can be gleaned from what The Supreme Court ruled in Verizon Communications v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407 n. 5, 124 S.Ct. 872, 157 L.Ed.2d 823 (2004) as to what it might do in Twombly?

5. What are plus factors that might justify submitting evidence of conscious parallelism to a jury?
6. Is the current uncertainly of conspiracy and conscious parallelism law relevant to what the standards for merger review should be?

7. Attached are pp. 70-76 of Chapter VI: Economics and Proof of Concerted Action published by The Sedona Conference © 2005 Commentary on the Role of Economics in Antitrust Law. It provides a useful background and approach to understanding the issue and is presented here with the permission of the copyright holder.

HANDOUTS

- Colloquy at Oral Argument in the Supreme Court in Twombly
- pp. 70-76 of Chapter VI: Economics and Proof of Concerted Action published by The Sedona Conference © 2005

1 IN THE SUPREME COURT OF THE UNITED STATES
2 -x
3 BELL ATLANTIC :
4 CORPORATION, ET AL., :
5 Petitioners :
6 v. : No. 05-1126
7 WILLIAM TWOMBLY, ET AL. :
8 -x
9 Washington, D.C.
10 Monday, November 27, 2006
11
12 The above-entitled matter came on for
13 oral argument before the Supreme Court of the United
14 States at 10:03 a.m.
15 APPEARANCES:
16 MICHAEL KELLOGG, ESQ., Washington, D.C.; on behalf of
17 the Petitioners.
18 THOMAS O. BARNETT, ESQ., Assistant Attorney General,
19 Department of Justice, Washington, D.C.; as
20 amicus curiae in support of the Petitioners.
21 J. DOUGLAS RICHARDS, ESQ., New York, N.Y.; on behalf
22 of the Respondents.
23
24
25

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1 complaint in this case that we are faced with.

2 MR. RICHARDS: I think that that would

3 satisfy conventional pleading standards under Rule

4 8(a). On the other hand, I don't think it would

5 satisfy the Second Circuit's standard below, because

6 the Second Circuit required enough facts to enable a

7 court to wrap its mind around a complainant,

8 understanding what it is you claimed happened. You

9 don't have to prove your case as a complainant, you

10 just have to --

11 JUSTICE BREYER: I'd also like a clear

12 answer, and I would like to go back to Justice

13 Stevens' question because I'm not sure what you're

14 thinking there. We have three steel sheet companies

15 in the United States, no more. They sell at $10 a

16 sheet. One day we have action in the case, a memo to

17 the president of the company. He says Mr. President,

18 if you cut your prices to $7 you will make even more

19 money unless the others go along. And if they get

20 there first, you will lose money. So whether they

21 cut or not, you'd better cut your prices. Reply from

22 the president: But if I don't cut my prices, they

23 won't cut theirs, and we are all better off. That's

24 your evidence. Do you win?

25 MR. RICHARDS: That would depend on the

1 vehicle --

2 JUSTICE BREYER: There is no depend.

3 That's the evidence. Do you win?

4 MR. RICHARDS: If that's the evidence, I

5 think I win.

6 JUSTICE BREYER: All right. And you cite

7 Matsushita for that?

8 MR. RICHARDS: No. For that I would cite

9 Judge Posner's decision.

10 JUSTICE BREYER: If you're right, then I

11 guess we could engage in this major restructuring of

12 the economy, and if that's the law, I'm surprised

13 they haven't done it, but maybe they have just been

14 recalcitrant.

15 MR. RICHARDS: Well, there's no major

16 restructuring of the --

17 JUSTICE BREYER: Well, because we have

18 concentrated industries throughout the economy, I

19 guess, or at least we used to, and I suppose that

20 that's a perfectly valid way of reasoning for an

21 executive in such a company, at least they teach that

22 at the schools of government, and people who aren't

23 really experienced in these things, but --

24 MR. RICHARDS: Well, the way Judge Posner

25 explains it in High Fructose is to say that it is

wgs℠

THE SEDONA CONFERENCE® COMMENTARY ON THE ROLE OF ECONOMICS IN ANTITRUST LAW

A Project of The Sedona Conference® Working Group on the Role of Economics in Antitrust (WG3)

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Foreword

Welcome to the first publication of our third Working Group, this one devoted to the Role of Economics in Antitrust. The Sedona Conference® is a nonprofit law and policy think tank based in Sedona, Arizona, dedicated to the advanced study, and reasoned and just development, of the law in the areas of complex litigation, antitrust law and intellectual property rights. It established the Working Group Series (the "WGS℠") to bring together some of the nation's finest lawyers, consultants, academics and jurists to address current issue areas that are either ripe for solution or in need of a "boost" to advance law and policy. (See Appendix B for further information about The Sedona Conference® in general, and the WGS℠ in particular). WGS℠ output is first published in draft form and widely distributed for review, critique and comment, including, where possible, in-depth analysis at one of our dialogue-based Regular Season conferences. Following this public comment period, the draft is reviewed and revised, taking into consideration what has been learned during the peer review process. The Sedona Conference® hopes and anticipates that the output of its Working Groups will evolve into authoritative statements of law and policy, both as these are and ought to be.

The Sedona Conference® Working Group Addressing the Role of Economics in Antitrust was formed out of a desire to help bring some clarity and uniformity to the use, and reliance upon, expert economic evidence and testimony in the litigation of an antitrust case. It is hoped that the principles and commentary that follow will be of immediate benefit to the bench and bar as they approach these issues. It is our expectation that we will benefit greatly from the public comment process.

I want to thank the entire Working Group for all their hard work, and especially the chair and editor Daniel R. Shulman, Esq., who has guided this effort for the past year. We also want to note that the Working Groups of The Sedona Conference® could not accomplish their goals without the financial support of their sponsors. This Working Group has been supported by the following sponsors for the last year - Founding Sponsors: Gray Plant Mooty and Simpson Thacher & Bartlett, and Supporting Sponsor: Constantine & Cannon.

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Richard G. Braman
Executive Director
The Sedona Conference®
August 2005

Chapter 6.
Economics & Proof of Concerted Action

INTRODUCTION

Proof of conspiracy in antitrust cases has become one of the more muddled areas of antitrust law. For many years, from the passage of the Sherman Act in 1890 up to the 1980s, the general trend of the law was towards liberalizing the type of proof sufficient to sustain a finding of fact that defendants had engaged in concerted action either unreasonably to restrain trade in violation of Section 1 of the Sherman Act, or to monopolize in violation of Section 2. Beginning in the mid 1980s, however, courts began taking a much narrower view of the type of evidence sufficient to create a submissible issue on the question of conspiracy or concerted action. The result has been to limit the types and increase the amount of proof required to prove conspiracy or concerted action when the plaintiff's proof consists of circumstantial evidence.

Along with increasing complexity and confusion in the law, a particular issue, the so-called oligopoly problem, has come into sharper focus. In an oligopoly setting, coordination of pricing and other activities is said by many commentators to become easier, if not inevitable, through conscious parallelism alone. Economic theory has posited that price uniformity that could be achieved only through express collusion in an unconcentrated market becomes much more organic and structural in an oligopoly, whose members are able to operate through conscious parallelism. Because the law has long been that conscious parallelism alone is insufficient to prove unlawful agreement, the issue for the courts has been where to draw the line between presumably lawful conscious parallelism, and unlawful collusion or agreement. In recent years, the use of economic evidence has received much attention and debate in this area. E.g., In re High Fructose Corn Syrup Antitrust Litig., 295 F.3d 651 (7th Cir. 2002); *Williamson Oil Co., Inc. v. Phillip Morris U.S.A.*, 346 F.3d 1287 (11th Cir. 2003); Werden, Gregory J., *Economic Evidence on the Existence of Collusion: Reconciling Antitrust Law with Oligopoly Theory*, 71 *ANTITRUST LAW JOURNAL* 719 (2004).

The Economics and Antitrust Working Group believes this to be an area in which the formulation of well-supported, economically sound principles can be of great help in guiding litigants and courts towards greater clarity, uniformity, rationality, and conformity with the best economic thinking on the subject of concerted action. The Principles that follow are intended to achieve these objectives.

At the outset, however, some preliminary matters are worth noting. First is the critical distinction between proof by direct evidence and proof by circumstantial evidence. Direct evidence is proof that establishes the existence of a fact without the need for additional inferences or other evidence. For example, direct evidence of agreement may include admissions by co-conspirators that a conspiracy exists, eye witness accounts of conspiratorial meetings, *In re Brand Name Prescription Drugs Antitrust Litig.*, 186 F.3d 781, 785 (7th Cir. 1999), or a written agreement memorializing a conspiracy. Circumstantial evidence, on the other hand, is evidence that requires inferences or additional evidence in order to establish an ultimate fact. Sometimes the chain of inferences may be relatively short and the path to the ultimate fact relatively direct, e.g., the smoking gun in the hand of the suspect. At other times, especially in antitrust cases, with their factual complexity, the chain will be much longer and the path more circuitous to the ultimate fact. Courts have observed, "Evidence in an antitrust conspiracy case is, in most cases, circumstantial." *C O 2 Fire Equip. Co. v. United States*, 197 F.2d 489, 494 (9th Cir. 1952).

In those cases in which proof of conspiracy is by direct evidence only, economic evidence generally has a much smaller role to play than in circumstantial evidence cases. Where the direct evidence of conspiracy is incontrovertible, the probative value of economic evidence from the defense should be seriously questioned by the court. If, however, the defense denies that the direct evidence is clear proof of conspiracy, economic evidence may be appropriate on the issue of agreement *vel non,* as discussed more fully hereafter.

Where economic evidence increasingly plays a role is in cases where proof of conspiracy is by circumstantial evidence, particularly cases seeking to establish agreement from parallel conduct and plus factors. These are the cases that the Principles enunciated hereafter address.

A second important preliminary matter is that the subject of concerted action involves two fundamental and interrelated issues. The first is what constitutes agreement under the antitrust laws. The second is what are the permissible means of proving agreement. Although the case law has answered both questions, one cannot say that the decisions have been uniformly clear, consistent, or helpful as precedents.

The Supreme Court attempted to answer both questions in *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752 (1984). To show agreement, a plaintiff must establish "a conscious commitment to a common scheme designed to achieve an unlawful objective," and must do so through "evidence that tends to exclude the possibility of independent action." 465 U.S. at 768. The problem with the Supreme Court's pronouncements is that they may have raised more questions than they have answered.

The "conscious commitment to a common scheme," which constitutes agreement, purports to be a restatement of existing law, and not a new formulation or definition of agreement under the antitrust laws. Under pre-*Monsanto* Supreme Court precedent, "It is not necessary to find an express agreement in order to find a conspiracy. It is enough that a concert of action is contemplated and that the defendants conformed to the arrangement." *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 142 (1948); *Lawlor v. Loewe,* 209 F. 721, 725 (2d Cir. 1913), *aff'd*, 235 U.S. 522 (1915) ("It is not necessary that there be a formal agreement between the conspirators. If the evidence satisfies the jury that they acted in concert, understandingly and with the design to consummate an unlawful purpose, it is sufficient.") In *Interstate Circuit, Inc. v. United States,* 306 U.S. 208, 227 (1939), the Supreme Court held, "Acceptance by competitors, without previous agreement, of an invitation to participate in a plan, the necessary consequence of which, if carried out, is restraint of interstate commerce, is sufficient to establish an unlawful conspiracy under the Sherman Act."

Up to the time of *Monsanto*, lower courts construed these precedents as allowing for wide latitude in finding unlawful agreement based on conduct, which might or might not include verbal communication. *Esco Corp. v. United States,* 340 F.2d 1000, 1007-08 (9th Cir. 1965) ("Written assurances . . . are unnecessary. So are oral assurances, if a course of conduct, or a price schedule, once suggested or outlined by a competitor in the presence of other competitors, is followed by all - generally and customarily - and continuously for all practical purposes, even though there be slight variations."); *C-O-2 Fire Equip. Co. v. United States,* 197 F.2d 489, 494 (9th Cir. 1952) ("Proof of a formal agreement is unnecessary, and were the law otherwise such conspiracies would flourish; profit rather than punishment, would be the reward.") Indeed, even after *Monsanto* these rules have retained a measure of vitality. *Toys R Us, Inc. v. F.T.C.,* 221 F.3d 928 (7th Cir. 2000).

Commentators and at least one court have asked whether Section 1 is broad enough "to encompass a purely tacit agreement to fix prices, that is, an agreement made without any communication among the parties," *In re High Fructose,* 295 F.3d at 654; and, if not, the nature and extent of the communication that must exist for an unlawful agreement under the Sherman Act. See discussion in Werden, 71 *Antitrust Law Journal* at 734-59.

This is obviously more a question of law than economics, an issue on which expert economic evidence cannot provide guidance to a finder of fact. Accordingly, the Principles stated hereafter do not address it.

The legal definition of agreement under Section 1 is, nonetheless, a significant issue affecting the use of economic evidence to prove conspiracy *vel non*, because the definition of agreement used by an expert economist cannot be different from the legal definition guiding the court if the economic evidence is to be probative and admissible. Indeed, failure to observe and follow the court's definition of agreement has resulted in the refusal of courts to admit or give credence to expert economic evidence. *Williamson Oil,* 346 F.3d at 1322-23. The need for expert economic evidence to conform to the applicable definition of agreement, whatever it may be, is therefore treated in the Principles hereafter.

The second aspect of agreement - how to prove it - is where economics and antitrust law intersect. In particular, economic evidence comes into play when a case involves proof of conspiracy from conscious parallelism. Conscious parallelism occurs when "the defendants' behavior was parallel," and "the defendants were conscious of each other's conduct and . . . this awareness was an element in their decision-making process." *Petruzzi's IGA Supermarkets, Inc. v. Darling-Delaware Co., Inc.,* 998 F.2d 1224, 1242-43 (3d Cir. 1993). Under well-established law, conscious parallelism alone is insufficient to create a jury issue on the fact of agreement. *Theatre Enters, Inc. v. Paramount Film Distrib. Corp.,* 346 U.S. 537 (1954).[30] The courts have thus drawn a line between acting with knowledge of what rivals are doing, which does not amount to agreement, and acting pursuant to a commitment to a conscious scheme, which does.

In conscious parallelism cases, the issue thus becomes what else is needed to allow the trier of fact to bridge this gap and find agreement. The law has long been clear that "business behavior is admissible circumstantial evidence from which the fact-finder may infer agreement." Theatre Enters., 346 U.S. at 540. In *American Tobacco Co. v. United States,* 328 U.S. 781, 809-10 (1946), the Supreme Court expatiated on this point:

> It is not the form of the combination or the particular means used but the result to be achieved that the statute condemns. It is not of importance whether the means used to accomplish the unlawful objective are in themselves lawful or unlawful. Acts done to give effect to the conspiracy may be in themselves wholly innocent acts. Yet, if they are part of the sum of the acts which are relied upon to effectuate the conspiracy which the statute forbids, they come within its prohibition. No formal agreement is necessary to constitute an unlawful conspiracy. Often crimes are a matter of inference deduced from the acts of the person accused and done in pursuance of a criminal purpose. . . . The essential combination or conspiracy in violation of the Sherman Act may be found in a course of dealings or other circumstances as well as in an exchange of words.

Eastern States Retail Lumber Dealers' Ass'n v. United States, 234 U.S. 600, 612 (1914) ("It is elementary, however, that conspiracies are seldom capable of proof by direct testimony, and must be inferred from the things actually done. . . .").

The rule commonly articulated in conscious parallelism cases is that for a conspiracy to be inferred from conscious parallelism, the plaintiff must present evidence of what are known as "plus factors." *Interstate Circuit v. United States,* 306 U.S. at 222-27; C-O-2 *Fire Equip. Co. v. United States,* 197 F.2d at 493; *Esco Corp. v.*

30. Although *Theatre Enters.* is universally cited for the proposition that conscious parallelism alone cannot establish agreement, the case in fact holds that conscious parallelism alone does not require a finding of agreement. 346 U.S. at 540-41.

United States, 340 F.2d 1000, 1007-08 (9th Cir. 1965); *Apex Oil Co. v. DiMauro,* 822 F.2d 246, 253-54 (2d Cir. 1987); *In re Plywood Antitrust Litig.,* 655 F.2d 627, 634 (5th Cir. 1981). Although there is no definitive and exhaustive list of plus factors, among those listed by the courts have been motive to conspire; opportunity to conspire; conduct against independent economic self-interest, rational only in the presence of agreement; departure from past business practice; and signaling or other information exchanges. *Merck-Medco Managed Care, LLC v. Rite-Aid Corp.,* 201 F.3d 436, 1999 WL 601840, *8-9 (4th Cir. 1999); *Apex Oil v. DiMauro,* 822 F.2d at 253-54; *Minpeco, S.A. v. Conticommodity Servs., Inc.,* 673 F. Supp. 684, 688 (S.D.N.Y. 1987). The Eleventh Circuit requires a plaintiff in a conscious parallelism case to demonstrate the existence of a single plus factor, which the court expansively defines as "any showing . . . that 'tends to exclude the possibility of independent action.'" *Williamson Oil v. Philip Morris,* 346 F.3d at 1300.

The problem with the current state of the law, however, is a lack of uniformity among the courts in defining, applying, and giving weight to plus factors. For example, opportunity to conspire is treated by some courts as being of no weight in the absence of proof of actual agreement. *Williamson Oil,* 346 F.3d at 1319 ("Indeed, the opportunity to fix prices without any showing that appellees *actually* conspired does not tend to exclude the possibility that they did not avail themselves of such opportunity or, conversely, that they actually did conspire.") (emphasis in original); *United States v. Taubman,* 297 F.3d 161 (2d Cir. 2002). While the Fourth Circuit finds that "evidence of acts contrary to an alleged conspirator's economic interest is perhaps the strongest plus factor indicative of a conspiracy," *Merck-Medco,* at *10; the Third Circuit finds that "evidence that the defendant acted contrary to its interest" "largely restate[s] the phenomenon of interdependence," which is what produces conscious parallelism. *In re Flat Glass Antitrust Litig.,* 385 F.3d 350, 360 (3e Cir. 2004).

Into this cloudy broth, the parties have increasingly added the seasoning of expert economic evidence, which has two principal flavors. First, there is evidence of market structure, which analyzes the features of an industry that render it more or less conducive to agreement or cartel-like behavior, such as concentration, barriers to entry, nature of the product, availability of pricing information, ease of policing an agreement, capacity utilization, and other factors that may make agreement desirable or practicable, or undesirable or impracticable. Second, there is evidence of market performance: the behavior of competitors in the industry and whether it is indicative of competition or collusion. Such evidence may include "fixed relative market shares"; "market-wide price discrimination"; "exchanges of price information"; "regional price variations"; "identical bids"; past express price-fixing; and "exclusionary practices." R.A. Posner, Antitrust, pp. 51-100, "Price Fixing and the Oligopoly Problem" (2d ed.) (University of Chicago 2001). To this endeavor, economists bring a variety of tools, such as econometric modeling, and a variety of economic theories and teachings, some of which courts find helpful, *In re High Fructose,* 295 F.3d at 654-55; and some not, *Williamson Oil,* 346 F.3d at 1317. Still other courts find such economic evidence relevant, but neither necessary nor sufficient to permit a trier of fact to find agreement. *In re Flat Glass Antitrust Litig.,* at n.12.

Assuming an economist has applied sound methods based on valid and accepted theory, the question of whether the court will accept the economic evidence may well turn on the court's own economic theory of oligopoly, which may or may not have a sound basis in economics. The economics of oligopoly have not been free of controversy, and have evolved and changed over time.

Much of the current judicial thinking on oligopoly derives from Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal,* 75 *HAR. L. REV.* 655 (1962). In his influential article, Professor Turner argued that coordinated pricing and other cooperative behavior resulting from conscious parallelism should not be treated as agreement under the Sherman Act. Turner's rationale was

three-fold: (1) he believed oligopoly behavior to be no different from that of sellers in a competitive industry in taking into account probable actions and reactions by competitors; (2) he concluded that to outlaw oligopoly behavior would be to make oligopoly pricing a violation, which would be inconsistent with the Sherman Act's not treating monopoly pricing as a violation; and (3) he found meaningful injunctive relief to be impossible because the conduct at issue was rational behavior taking into account probable responses of competitors. Werden, *Economic Evidence of Collusion,* 71 *ANTITRUST LAW JOURNAL* at 772-73.

The Turner view of oligopoly, at least with courts considering the issue, has consistently carried the day, and is deeply entrenched with the courts, even if they do not give Turner due attribution in their decisions. *E.g., Williamson Oil,* 346 F.3d at 1298-1300.

In 1969, another distinguished thinker in antitrust, Professor Richard A. Posner, now Judge Posner, laid out a dissenting view, differing from the Turner view on oligopoly. Richard A. Posner, *Oligopoly and the Antitrust Laws: A Suggested Approach,* 21 *STANFORD LAW REV.* 1562 (1969). Since his original article, Posner has amplified and refined his thesis in scholarship and judicial opinions. Posner, *Antitrust Law: An Economic Perspective,* Chapter 4 (1976); Posner, *Antitrust*, pp. 51-100, "Price-Fixing and the Oligopoly Problem" (2d ed.) (University of Chicago 2001); *In re High Fructose,* 295 F.3d at 654. In Posner's view, ". . . the interdependence theory of oligopolistic pricing . . . is inadequate," *Antitrust* (2d ed.) at p. 57, because: (1) time lags in matching price cuts and differences in ability to expand output in response to price cuts may render price competition feasible in oligopolies; (2) price cuts may not affect rivals if they result in sales to new customers, or are only partial, and are thereby feasible in oligopolies; (3) the interdependence theory does not adequately explain how prices have risen above competitive levels in the first place; and (4) matching price increases involves choices to forgo benefits from competing that are against self-interest in the absence of agreement. He concludes, "There is no sound basis in economic theory for thinking that if there are just a few major sellers in a market, competition will disappear automatically." *Id*. at 69.

Posner has also argued that the courts can and should find agreement based solely on the operation of conscious parallelism in an oligopoly setting. "Each seller must still decide whether to limit output, and this implies at least tacit negotiation with his major competitors." *Id.* Accordingly, "it may be possible to demonstrate through economic evidence the existence of collusive pricing even though no overt acts of collusion are detected." *Id.* at 79. The same views are floated in *Fructose,* 295 F.3d at 654.

Unlike Turner, whose view has received general acceptance by the courts, Posner's position has received hardly a mention in reported decisions. *In re Flat Glass Antitrust Litig., Id.* (in the course of stating and embracing the Turner position, the Third Circuit gives Posner two "but see" references and no more).

Economics has brought to bear on the "Turner-Posner debate" modern oligopoly theory, which applies the teachings of game theory and the Prisoners' Dilemma. Werden, *id.* In the Prisoners' Dilemma, prisoners A and B, accused of the same crime, are held in isolation, unable to communicate with each other. Each is told that if one implicates the other, while the other remains silent, the prisoner accusing the other will go free, while the one remaining silent will receive a substantial penalty, say a ten-year sentence. Each is also told that if each accuses the other of the crime, then both will receive an intermediate penalty, say a five-year sentence. Finally, each is told that if both remain silent, both will receive a much lighter penalty, say a three-year sentence. The insight of game theory is that in the absence of prior agreement, express or tacit, each prisoner's informing on the other prisoner will become a dominant strategy, because of the potential cost of not doing so.

One important contribution of modern oligopoly theory is to recognize that the Prisoners' Dilemma provides a starting point and conceptual framework for analyzing competitive behavior in an oligopoly setting. Although few competitive scenarios may actually present a Prisoners' Dilemma, economic theory has something important to say about all those scenarios that do not present a Prisoners' Dilemma. In the Prisoners' Dilemma, informing is a dominant strategy, in the sense that if one prisoner went first and the other prisoner were able to observe the action of the first prisoner, the second prisoner would inform no matter what the first prisoner did. Hardly any competitive scenarios have such dominant strategies, moreover, as most competitive situations are not one-shot interactions, as in the Prisoners' Dilemma, but involve repeated and continuing interactions among firms over time.

Where firm conduct is inconsistent with the outcome of a one-shot interaction, it is reasonable to infer that firm conduct reflects the outcome of repeated interaction, and thus coordination in an economic sense, but that result may or may not reflect the outcome of an agreement in the legal sense. The point is that with repeated interaction, many outcomes are often possible, and firms may find an outcome with higher than competitive prices that will be sustainable, although they need not necessarily find that outcome through agreement. Mere price leadership, for example, may be enough. In such circumstances, without more, there is no agreement under the present state of the law.

It is therefore important to distinguish between coordination and agreement. Coordination, in which firms act with knowledge and expectations of what their rivals are doing, may properly be considered a prerequisite for agreement, and can be inferred from a multitude of factors on which an economic expert might appropriately opine. (For example, evidence as to concentration and entry barriers might be relevant, as might simulation modeling.) Agreement, however, under the present state of the law, requires more than mere coordination. In addition, the trier of fact must be able to conclude that it is more likely than not that the particular outcome could not have been reached absent negotiation through some form of communication, either verbal or nonverbal. This is what distinguishes mere price leadership and coordination from agreement. An economist may be able to opine on this question to some extent, such as by analyzing whether a particular outcome is too complex to have arisen plausibly through price leadership, but would instead have required greater communication than simple price signaling would permit. Non-economic evidence, *e.g.*, as to communication or the opportunity to communicate, would of course also be relevant.

Modern oligopoly theory provides a basis for expert economic testimony that action is contrary to individual economic self-interest in the absence of agreement. Although the courts generally recognize this as a plus factor, the cases have generally been unable to define and apply this concept in a clear and consistent manner. Expert economic testimony may thus be helpful in enabling the trier of fact to understand whether conduct in question is truly contrary to individual economic interests in the absence of agreement.

For example, firms in an oligopoly may have increased prices more or less simultaneously, where there is an irreversible penalty associated with an unsuccessful attempt to lead or follow a price increase, like the permanent, irrecoverable loss of important customers if all firms do not match. Given such a permanent disadvantage from guessing wrong about whether other competitors will match, an economist may be able to testify that no rational firm would have initiated or matched the price increase in the absence of agreement that all firms would match. Hence, undertaking such conduct would be contrary to individual economic self-interest, but rational if the firms had reached agreement. Such expert economic analysis, applying game theory and the Prisoners' Dilemma, may provide a principled basis for showing when conduct is or is not contrary to economic self-interest in the absence of agreement. The question then becomes whether this should be

sufficient to infer agreement, or whether additional evidence ought to be required, and of what sort, such as evidence of actual verbal or nonverbal communication. These, however, are questions not of economics, but of law, for the courts to resolve.

The contribution of modern oligopoly theory is to provide a sound economic basis for finding the presence or absence of this plus factor, action contrary to self-interest in the absence of agreement. This is indeed potentially a valuable contribution, which may help bring order and clarity to an area of law much confused at present. Economics has something to offer here, and there is no reason not to receive and consider this evidence in deciding whether there is a genuine issue of fact on action contrary to self-interest in the absence of agreement. Accordingly, the Principles hereafter will address this issue.

Finally, there is the matter of the terms used by economists in expressing their opinions on issues of concerted action. It is one thing for economists to say that in their opinion economic conditions are conducive or not conducive to the formation of an agreement, or that conduct is or is not consistent with the existence of an agreement. It is quite another to testify to opinions that agreements do or do not exist. The line to be drawn is between Rule 702's allowance of expert evidence to "assist the trier of fact to understand the evidence or to determine a fact in issue," and testimony that improperly usurps the functions of the jury. Expert economic testimony on issues of concerted action ought to observe this distinction, and not violate it. The Principles hereafter address this.