Antitrust theory is notoriously fractured along ideological lines. Interventionists stand ready to regulate at a moment’s notice, seeing anticompetitive effects lurking in the shadows every time competitors so much as exchange greetings on the street. The Hyde Park crowd responds to what they see as unjustified paranoia with quasi-religious faith in the self-regulating efficiency of markets, trusting in something more like an invisible but omnipotent god than the “invisible hand” to ensure competitive results. But amidst all of this contention and disagreement there are two areas of broad consensus. Antitrust commentators of all ideological stripes: (1) acknowledge that horizontal price-fixing, bid-rigging, and market-allocation cartels are bad;¹ and (2) seem to care far more about the firms involved in cartel activity than about the people actually doing the conspiring.

There is also general consensus as to why cartels are bad: they reduce consumer welfare.² That is, horizontal cartels raise prices, lower output, and reduce quality. As a result, buyers victimized by cartels end up paying too much for too little; in economic terms, cartels generate substantial net allocative, productive, and dynamic efficiency losses. Unlike most other forms of potentially anticompetitive behavior, there are few credible pro-consumer explanations for horizontal price fixing, bid rigging, or market division, and those that do exist depend upon unique market dynamics unlikely to obtain frequently in the real world. Thus, even commentators who have made a cottage industry out of attacking what they see as antiquated and economically unsound per se rules in other areas of antitrust have generally

¹ Even here, there is at least some room for disagreement. For example, Chicago School and Austrian School commentators might acknowledge the potential consumer welfare harms associated with cartel activity, but might nonetheless be skeptical of intervention on error cost and other grounds. The framework we advance in this Article should prove valuable for antitrust thinkers regardless of their ideological commitments, offering a more robust and integrated theory of collusion than any predecessor theory. Our framework might even help error cost skeptics, insofar as it suggests a more targeted approach to cartel enforcement than the “blunt instrument” tactics generally in use today.

² There are other potential normative theories of antitrust, of course. But for purposes of this Article, we accept the consensus “consumer welfare maximization” approach.
embraced the continued application of *per se* treatment in the context of “hard-core cartel activity” on consumer welfare grounds.

Given this consensus, there should be relatively well-developed theories of collusion in the antitrust literature. There aren’t. The cupboard is not entirely bare, of course—scholars have occasionally attempted to address the problem in the century-and-a-quarter since Congress passed the Sherman Act. But that work, while helpful, is nonetheless woefully incomplete. In this Article, we make a start on remedying that situation.

We state our overarching perspective at the outset: the goal of anti-cartel enforcement must be to minimize the social cost of cartelization and maximize consumer welfare by deterring cartel formation in the first instance and/or destabilizing existing cartels to the point of dissolution as quickly as possible after they form. We thus adopt a lexically ordered approach to the cartel problem: All else equal, we prefer measures that deter cartel formation to those encouraging current cartel members to defect to enforcement authorities, and measures encouraging defection to those encouraging mere dissolution. Of course, we prefer any of those outcomes to outcomes in which cartels continue to exist and cause consumer harm.

This lexical ordering is subject to one additional constraint: any approach to cartel enforcement must also account for the social costs of that enforcement. Some of those costs are traditional enforcement costs—direct government expenditures on antitrust enforcement activity, for example. But a credible cartel enforcement regime must also account for error costs (both Type I and Type II), as well as other forms of potential social cost.

Existing work on cartel theory, while valuable, suffers from two interrelated flaws. First, for largely historical and methodological reasons, the vast majority of existing

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3 There are several different ways that detection occurs. See George A. Hay & Daniel Kelley, *An Empirical Survey of Price-Fixing Conspiracies*, 17 J. L. & Econ. 13 (1974) (finding that the majority of cartel detection resulted from five different sources: 24% from grand jury investigation of another case, 20% from competitor complaints, 14% from customer complaints, 12% from government agency complaint, 6% from employee complaints.) In more recent years, the DOJ’s amnesty program has become the overwhelming source of cartel detection, but the amnesty programs are still not a silver bullet. Scott D. Hammond, *The Evolution of Criminal Antitrust Enforcement Over the Last Two Decades*, National Institute on White Collar Crime 3 (Feb. 25, 2010) (explaining that over 50% of international cartel investigations are “initiated, or being advanced, by information received from a leniency applicant”); Scott D. Hammond, *When Calculating the Costs and Benefits of Applying for Corporate Amnesty, How Do You Put a Price Tag on an Individual’s Freedom?*, National Institute on White Collar Crime 2 (Mar. 8, 2001) (“Over the last five years, the Amnesty Program has been responsible for detecting and prosecuting more antitrust violations than all of our search warrants, consensual-monitored audio or video tapes, and cooperating informants combined.”). CITE more recent statistics

4 In our view, at least some existing reform proposals run aground not because they wouldn’t reduce the overall level of cartel activity, but because their positive effects come at too high a cost. See Part __, infra.
work focuses on the firm as the relevant unit of analysis. For over seventy years, antitrust scholars have generally fought over the same ground: whether and under what circumstances firms have incentives to collude and can do so successfully. These are important questions, of course. But this rather single-minded focus on the firm tends to obscure equally important facts: to our knowledge, no firm has ever made the initial telephone call seeking a meeting with its competitors, nor has a firm ever picked up the receiver on the other end. Firms don’t meet in Hawaiian resorts to allocate markets, nor do firms storm out of such meetings in anger when co-conspirators won’t behave as desired. At the end of the day, firms don’t decide to collude, and they don’t decide to stop colluding. People do.

Individuals run every antitrust conspiracy. And the vast majority of those individuals serve to greater or lesser degree as agents of some larger organization. Accordingly, their incentives as individuals may not always align with those of their respective firms. Sadly, individual incentives in cartel formation and continuations are woefully undertheorized; only a handful of academic articles explore the role of the individual in antitrust conspiracies. Moreover, in our view, the existing research is either deliberately preliminary, intentionally oversimplified, or deeply flawed in its analysis and conclusions.

Second, the existing literature—whether firm-centric or individual-focused—fails completely to explore the implications of the most important principal-agent problem with respect to cartel formation and continuation. In our view, any serious theory of collusion must (1) take firm-level incentives seriously; (2) take individual incentives equally seriously and (3) integrate those potentially disparate incentives coherently. This Article is the first to make the attempt.

In Part I of the Article, we briefly review the existing theoretical work on cartel formation and success. We identify three broad categories of relevant literature. The largest and best-developed body of scholarship focuses almost exclusively on

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5 We explore the historical underpinnings of firm-centric antitrust analysis in a separate paper. See Stancil & Marchant, ___________.

6 This point about the role of individuals within firms was alluded to by Jensen and Meckling. Michael C. Jensen & William H. Meckling, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, 3 J. Fin. Econ. 306, 311 (1976) (“The firm is not an individual. It is a legal fiction which serves as a focus for a complex process in which the conflicting objectives of individuals (some of whom may ‘represent’ other organizations) are brought into equilibrium within a framework of contractual relations.”).

7 There are exceptions, of course. The differing degree of overlap between firm interests and individual incentives is a huge part of the story. We address these agency costs and the likely inter-conspiracy and intra-conspiracy variations in those costs in Part __, infra.

8 Of all the existing work on individual cartel participants, Chris Leslie’s Unfaithful Agents piece comes the closest to exploring this dynamic. But Leslie ultimately encourages exploitation of individual-level agent-principal problems in cartels involving more than one individual intra-firm participant. See Christopher Leslie, ______________. He effectively treats the individual “prime mover” in any conspiracy as synonymous with the firm employing him, rather than recognizing the potential agency cost disconnects between “prime movers” and their employers. In addition, Leslie’s prescriptive approach strikes us as involving unacceptably high social costs. See Part __, infra.
firm-level incentives, starting with Edward Mason’s and Joe Bain’s early interventionist Structure-Conduct-Performance (“SCP”) contributions. This literature develops, call-and-response style, through the Chicago School and Austrian critiques of SCP, and then onto game-theory-influenced post-Chicago accounts. To be clear, this scholarship is of enormous value; it fleshes out the dynamics under which a firm might either encourage its agents to collude on its behalf, or at turn a blind eye or look the other way. But the firm-level focus also obscures certain important realities. More important, in our view, the firm-centric analytical paradigm leads inexorably to overly-stylized and fatally reductionist enforcement philosophies. Failure to incorporate individual-level incentives into the mix ultimately yields an enforcement approach vulnerable to several “economic bottlenecks” where firm-level economic theory runs headlong into the agency issues present at the intersection of firm incentives and individual utility functions.

A second, much smaller body of literature focuses attention on individual incentives in cartel formation and success. These authors address the problem using theoretical, experimental, and case study approaches, but commit essentially the mirror-image sin of their firm-focused counterparts, avoiding significant engagement with firm-level incentives in their work.10

A third category of work is essentially aspirational, offering the occasional insight into individual-level incentives, but mostly expressly highlighting the need for additional rigorous research to shed more light on the ways individual incentives affect cartel formation and function.11

Virtually all existing work on cartel theory is highly susceptible to a “silo mentality” critique. That is, none of the existing literature engages seriously with a critical fact: the real-world horizontal cartel is a hybrid creature, arising partially out of firm-level incentives, partially from intra-firm individual-level incentives, and partially from the interaction of the two. Given the path-dependence problems inherent in the development of antitrust theory, it is perhaps understandable that commentators have generally confined themselves to one or the other. But “understandable” does not mean “acceptable.” Any attempt to really understand cartels must engage firm-level dynamics, individual-level dynamics, and the interaction between the two.

Part II reconceptualizes the horizontal cartel in more realistic and dynamic terms. Antitrust commentators sometimes use a “dance” metaphor to describe cartel conduct.12 This makes a certain amount of sense, because the interfirm coordination and choreography required for a successful cartel is often quite

\[\text{\textsuperscript{9}}\text{Consider pushing back to Cournot. Big ol’ string cite here.}\]
\[\text{\textsuperscript{10}}\text{See, e.g., Leslie, Spagnolo.}\]
\[\text{\textsuperscript{11}}\text{See, e.g., Daniel Sokol (Wright & Ginsburg?)}\]
\[\text{\textsuperscript{12}}\text{This likely dates to Socony-Vacuum and the “dancing partner” labels the conspirators in that scheme employed. See ______.}\]
intricate, even intimate. But commentators employing the dance analogy generally fail to acknowledge that virtually every cartel consists not only of a quadrille between participating firms, but also a series of smaller partnered dances (sometimes willing, sometimes not) between those firms and the individual agents actually doing the conspiring “on their behalf.” The story of collusion is a story of dances within dances.

It is thus absolutely critical that we acknowledge and address the complex interplay of interfirm and intrafirm dynamics in the collusion context. Focusing only on the larger dance leads to one set of errors, and focusing only on a single individual dance partner leads to another. We thus recharacterize antitrust conspiracies in a way that accounts for both dynamics.

We explain that antitrust conspiracies are perhaps best understood as a special subspecies of “chain” – another metaphor common to scholarship addressing a variety of collaborative crime contexts. Specifically, a successful antitrust conspiracy typically consists of a relatively small number of “links” that enclose around a market. But unlike other forms of collaborative crime, would-be cartelists usually cannot substitute one link for another. Nor can they typically accomplish their illicit goals using a “shorter” chain with fewer participants. If a major competitor refuses to participate in a price-fixing scheme, cartel ringleaders cannot generally go and find another company to take its place. Neither can they decide to “go it alone;” the absence of a key industry player typically destroys the value of the cartel.

Moreover, antitrust conspiracies are neither externally monolithic nor internally uniform.13 Rather, every cartel chain is different, and every link composing a given cartel’s “chain” is different.14 The internal incentive structures facing one participant in a given cartel likely differ from those facing another participant in that same cartel. Coupled with the “fixed chain length” phenomenon largely unique to antitrust conspiracies, this variance from link to link in turn implies that antitrust enforcement efforts might reasonably be focused on identifying the “weakest link” in conspiratorial chains. Any significant break in the chain likely destroys the value of the conspiracy to its participants.

The Part concludes by explaining that each link in a cartel chain consists of two components: (1) the firm and (2) the individual participant(s) affiliated with that firm. Because there is substantial variation in the character of the relevant internal firm/individual relationships (from near-identity of incentives to substantial

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13 Margaret C. Levenstein & Valerie Y. Suslow, Breaking Up Is Hard to Do: Determinants of Cartel Duration, 54 J. L & ECON. 455, 482 (2011) (“[The] absence [of certain criteria] in any particular cartel probably says more about the unique information structure of that market than anything else.”).

14 See Part II infra.
incentive disalignment), identifying the “weakest link”\textsuperscript{15} may often involve identifying cartel participants (actual or potential) facing the biggest disconnect between firm-level and individual-level incentives.

Part III explores the implications of an integrated approach to cartel theory. Just as the vast majority of relevant theoretical commentary focuses on firm-level analysis, most existing cartel enforcement activity explicitly or implicitly focuses on firms as well.\textsuperscript{16} Yet the varying character of the agency relationships between firms and their employees capable of engaging in cartel activity strongly imply that there are inherent limits to firm-focused enforcement strategies. Current firm-focused enforcement may not have any impact at all on certain actual or potential cartelists. And additional potentially “effective” firm-focused enforcement efforts may well offer too little return to justify the cost. We therefore offer a simple economic model of individual collusion incentives to complement firm-level antitrust theory.

Our model differs from the very limited existing work on individual-level cartel theory in one critical respect: we take the individual seriously. That is, we acknowledge that each individual considering or engaging in cartel activity faces his\textsuperscript{17} own distinct set of incentives. Our individuals are not ciphers, nor do we treat individuals within a conspiracy\textsuperscript{18} as functionally uniform. Accordingly, our

\textsuperscript{15} We need to give Sokol his due here or in Part II when we discuss this. D. Daniel Sokol, Cartels, Corporate Compliance, and What Practitioners Really Think About Enforcement, 78 ANTITRUST L.J. 201, 230 (2012) (“The weak link in anti-cartel compliance may be at the individual rather than the firm level.”).

\textsuperscript{16} There is one important exception: antitrust enforcers in recent years have emphasized the importance of significant incarceration time for individual participants. See, e.g., Gregory J. Werden, Scott D. Hammond, & Belinda A. Barnett, Deterrence and Detection of Cartels: Using All the Tools and Sanctions, 56 ANTITRUST BULL. 207 (2011). But as we demonstrate below, the Werden, Hammond, & Barnett analysis falls far short as well.

\textsuperscript{17} We do not use the gender-specific masculine pronoun solely for convenience; as of this writing, less than 1% of all individual criminal antitrust defendants have been women—approximately $x$ out of $y$ since 1997. (Cite own counting work). There are several possible explanations for this phenomenon. It is possible, for example, that female conspirators are vanishingly rare in real life because women remain systematically underrepresented in the antitrust-relevant positions within modern businesses. Perhaps more controversially, it is similarly possible that women differ systemically from men in ways relevant to our analysis. For example, it is possible that, distributionally speaking, women in relevant jobs maximize different personal utility functions than their male counterparts, such that they systematically find antitrust conspiracies less attractive than men do. It could also be that they're simply better at conspiring without getting caught, since our sample is necessarily limited to those who have faced criminal prosecution. Finally, it is at least theoretically possible that an “old boys club” mentality continues to operate, such that conspirators deliberately exclude women because of their gender. If women are simply better at conspiring than men, we are left in a difficult position. But if either the “women don’t value collusion as highly” or even the “old boys club” explanations are correct, many industries arguably can be made less susceptible to collusion by the simple expedient of emplacing women in antitrust-sensitive positions of authority. We reserve for later work a full treatment of gender-related issues in antitrust law.

\textsuperscript{18} At various points throughout the Article, we refer for convenience to individual as "cartel participants" rather than “actual or potential cartel participants.” Our analysis applies with equal force to both actual and potential cartel participants, and is in fact grounded in large part upon the notion that the goal is stopping cartels before they start. We use this terminology solely because it is less cumbersome.
individual incentives model yields different results for different people; those
differences arise out of individuals' differing perceptions as to the probability of
successful collusion, the anticipated personal utility of successful collusion, the
perceived risks of getting caught, the personal costs of getting caught, and
potentially other factors.\textsuperscript{19}

The dynamics of the agency relationship between individual and firm is the most
important driver of the heterogeneous distribution of individual incentives. A
stock-option-heavy Chief Executive Officer or majority shareholder is likely to face
quite different economic incentives than a salary-only Vice-President of Midwest
Sales.\textsuperscript{20} Accordingly, incorporation of individual incentives may be a \textit{necessary}
condition for a coherent theory of collusion, but it is not \textit{sufficient}. Collusion theory
must also account for firm-level incentives and their interaction with those
individual incentives as well.

Although we deliberately avoid strong prescriptive arguments in this preliminary
work, we draw several tentative conclusions with normative overtones or
implications. First, cartel enforcement efforts likely should be retail, not
wholesale—enforcers should focus on identifying the weakest link in the cartel
chain rather than adopting one-size-fits-all "blunt strategies. By targeting the
weakest link, enforcers should be able to maximize consumer welfare at relatively
low net social cost.

Second, identification of the weakest link requires careful analysis of both firm- and
individual-level incentives, as well as the character of the relationship between
individual participants and the firms employing them. We suggest that the "weakest
link" may often be found in the enterprise with the largest disconnect between firm-
level incentives and individual incentives.

Third, there is likely little low-hanging fruit left with respect to the expansion of
firm-level enforcement initiatives. Thus, enforcers should focus their attention
upon the changing the calculus for \textit{individuals} employed by "weakest link" firms.
This will require significant thought regarding the extent to which the various
drivers of the individual collusion decision can be moved by external forces.

Finally, our model and analysis strongly suggest that certain traditional external
stimuli (e.g., further increases to individual prison sentences for convicted
cartelists) may be of limited additional marginal value in changing individual
behavior. We thus recommend exploring other potential efforts to change the
"weakest link" cartelist's collusion calculus.

\textsuperscript{19} Giancarlo Spagnolo, \textit{Managerial Incentives and Collusive Behavior}, 49 \textit{EUROPEAN ECON. REV.} 1501, 1515 (2005) (noting that while higher level managers engage in collusion, "intermediate
management" are the individuals most likely to facilitate collusive behavior within firms).

\textsuperscript{20} See Giancarlo Spagnolo, \textit{Managerial Incentives and Collusive Behavior}, 49 \textit{EUROPEAN ECON. REV.} 1501
(2005).