Full text available at: http://dx.doi.org/10.1561/0700000027

Seller Reputation

Full text available at: http://dx.doi.org/10.1561/0700000027

Seller Reputation

Heski Bar-Isaac

New York University
New York, NY 10003
USA
heski@nyu.edu

Steven Tadelis

University of California
Berkeley, CA 94720
USA
stadelis@haas.berkeley.edu

now
the essence of knowledge

Boston – Delft

Full text available at: http://dx.doi.org/10.1561/0700000027

Foundations and Trends® in Microeconomics

Published, sold and distributed by:
now Publishers Inc.
PO Box 1024
Hanover, MA 02339
USA
Tel. +1-781-985-4510
www.nowpublishers.com
sales@nowpublishers.com

Outside North America:
now Publishers Inc.
PO Box 179
2600 AD Delft
The Netherlands
Tel. +31-6-51115274

The preferred citation for this publication is H. Bar-Isaac and S. Tadelis, Seller Reputation, Foundations and Trends® in Microeconomics, vol 4, no 4, pp 273–351, 2008

ISBN: 978-1-60198-158-5
© 2008 H. Bar-Isaac and S. Tadelis

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, mechanical, photocopying, recording or otherwise, without prior written permission of the publishers.

Photocopying. In the USA: This journal is registered at the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by now Publishers Inc for users registered with the Copyright Clearance Center (CCC). The 'services' for users can be found on the internet at: www.copyright.com

For those organizations that have been granted a photocopy license, a separate system of payment has been arranged. Authorization does not extend to other kinds of copying, such as that for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. In the rest of the world: Permission to photocopy must be obtained from the copyright owner. Please apply to now Publishers Inc., PO Box 1024, Hanover, MA 02339, USA; Tel. +1-781-871-0245; www.nowpublishers.com; sales@nowpublishers.com

now Publishers Inc. has an exclusive license to publish this material worldwide. Permission to use this content must be obtained from the copyright license holder. Please apply to now Publishers, PO Box 179, 2600 AD Delft, The Netherlands, www.nowpublishers.com; e-mail: sales@nowpublishers.com

Full text available at: http://dx.doi.org/10.1561/0700000027

Foundations and Trends® in Microeconomics

Volume 4 Issue 4, 2008

Editorial Board

Editor-in-Chief:
W. Kip Viscusi
Vanderbilt University

Editors

Richard Carson, UC San Diego (environmental economics)
Joseph Harrington, Johns Hopkins University (industrial organization)
Tom Kniesner, Syracuse University (labor economics)
Mark V. Pauly, University of Pennsylvania (health economics)
David Wildasin, University of Kentucky (public economics)
Peter Zweifel, University of Zurich (insurance economics)

Full text available at: http://dx.doi.org/10.1561/0700000027

Editorial Scope

Foundations and Trends® in Microeconomics will publish survey and tutorial articles in the following topics:

- Environmental Economics
- Contingent Valuation
- Environmental Health Risks
- Climate Change
- Endangered Species
- Market-based Policy Instruments
- Health Economics
- Moral Hazard
- Medical Care Markets
- Medical Malpractice
- Insurance economics
- Industrial Organization
- Theory of the Firm
- Regulatory Economics
- Market Structure
- Auctions
- Monopolies and Antitrust
- Transaction Cost Economics
- Labor Economics
- Labor Supply
- Labor Demand
- Labor Market Institutions
- Search Theory
- Wage Structure
- Income Distribution
- Race and Gender
- Law and Economics
- Models of Litigation
- Crime
- Torts, Contracts and Property
- Constitutional Law
- Public Economics
- Public Goods
- Environmental Taxation
- Social Insurance
- Public Finance
- International Taxation

Information for Librarians
Foundations and Trends® in Microeconomics, 2008, Volume 4, 8 issues. ISSN paper version 1547-9846. ISSN online version 1547-9854. Also available as a combined paper and online subscription.

Full text available at: http://dx.doi.org/10.1561/0700000027

Foundations and Trends® in
Microeconomics
Vol. 4, No. 4 (2008) 273–351
© 2008 H. Bar-Isaac and S. Tadelis
DOI: 10.1561/0700000027

Seller Reputation

Heski Bar-Isaac[1] and Steven Tadelis[2]

[1] *Department of Economics, New York University, 269 Mercer Street, New York, NY 10003, USA, heski@nyu.edu*

[2] *Walter A Haas School of Business, University of California, Berkeley, CA 94720, USA, stadelis@haas.berkeley.edu*

Abstract

Seller reputation is an important asset because buyers often choose sellers on the basis of their reputation. This is particularly true when the quality of the good or service transacted is hard to measure and the parties cannot perfectly contract on the outcome of the transaction. As a consequence, the seller will be mindful of building and maintaining a good reputation through the information that buyers have about the seller, including previous transactions and the reports of other buyers.

We introduce a unifying framework that embeds a number of different approaches to seller reputation, incorporating both hidden information and hidden action. We use this framework to stress that the way in which consumers learn affects both behavior and outcomes. In particular, the extent to which information is generated and socially aggregated determines the efficiency of markets.

After reviewing these theoretical building blocks we discuss several applications and empirical concerns. We highlight that the environment in which a transaction is embedded can help determine whether the transaction will occur and how parties will behave. Institutions, ranging

Full text available at: http://dx.doi.org/10.1561/0700000027

from the design of online markets to norms in a community, can be understood as ensuring that concerns for reputation lead to more efficient outcomes. Similarly, the desire to affect consumer beliefs regarding the firm's incentives can help us understand strategic firm decisions that seem unrelated to the particular transactions they wish to promote.

We conclude by considering slightly different models of reputation that lie beyond the scope of our framework, briefly reviewing the somewhat sparse empirical literature, and highlighting and suggesting future directions for research.

Full text available at: http://dx.doi.org/10.1561/0700000027

Contents

1 Introduction **1**

2 A Simple Framework **7**

3 Pure Hidden Information (The Learning Approach) **9**

4 Pure Hidden Action (The Repeated Game Approach) **15**

5 Mixed Models: Hidden Types and Actions **19**

5.1 Seller Does Not Know Her Type 20
5.2 Seller Knows Her Type 23

6 Trading Reputations **31**

7 Exogenous Factors Influencing Reputation **37**

7.1 Life-cycle and Dynamic Effects 38
7.2 Competition 40
7.3 Size of the Firm 41

Full text available at: http://dx.doi.org/10.1561/0700000027

8 Reputation and Institutions **43**

8.1 Social Institutions 43
8.2 Electronic Marketplaces: A Designed/Shaped Institution 45

9 Strategic Manipulation of Reputational Environments **49**

9.1 Signaling 49
9.2 Linking Transactions 51
9.3 Organizational Form and Personnel Policies 53

10 Beyond Reputations for Quality **57**

10.1 Reputation for Expertise 57
10.2 Multiple Dimensions of Interest 60

11 Empirical Studies **63**

12 Future Directions **67**

Acknowledgments **71**

References **73**

Full text available at: http://dx.doi.org/10.1561/0700000027

1

Introduction

Most economic transactions are described by one party procuring goods or services from another party, either through monetary exchange, barter or the promise of future reciprocation. The most naive model of economic exchange assumes that the qualities and characteristics of these transactions are well known and understood by the parties involved, and that markets will clear to allocate the goods and services to those who value them the most. This approach — albeit useful in generating some building blocks of economic analysis — is often inadequate to describe many realistic situations of exchange. Common examples include mundane transactions in which a person buys a bottle of wine with unknown quality, a firm who hires an employee with unknown talent, or on a larger scale, a government who procures a weapons system with unknown properties in the battlefield.

In Akerlof's (1970) classic article *The Market for Lemons*, it is shown that this kind of uncertainty can hinder the operation of markets to the possible extreme of markets failing to operate despite obvious gains from trade. That is, in the face of inherent quality uncertainty market failures will prohibit efficient exchange. This uncertainty can

Full text available at: http://dx.doi.org/10.1561/0700000027

stem from two possible sources that are two central pillars of what is now referred to as "the economics of information."

First, quality uncertainty may be a result of *unobserved primitives* that determine the quality of the good or service in the spirit of Akerlof's "adverse selection." As an example, consider a company that wishes to procure consulting services. If this skill of the employees in the consulting firm will determine the quality of the transaction then uncertainty over the employees skill may deter the company from paying a fee that would be adequate to engage the consulting firm. This is true even though both the company and the consulting firm would benefit from establishing the relationship.

Second, quality uncertainty may be a result of *unobserved actions* that determines the quality of the good or service, what is known now as "moral hazard." Using the example above, if the company can gather information and screen the skills of different consulting firms but cannot monitor the consultants' productive effort, then the company may fear that the hired consultants will shirk on their job, and the transaction may therefore be avoided altogether. Of course, both hidden information and hidden action might be present simultaneously.[1]

Still, despite the existence of such problems in the marketplace, the exchange of extremely complex goods and services, with performance measures that are hard to describe or monitor, is commonplace. The question posed is then, what are the remedies that foster exchange in these hazardous market environments? One such remedy is the introduction of contingent contracts. Obviously, if the consultant's effort can be contracted upon, then a contract of the form "you will be paid if you work adequately and you will not be paid if you shirk" will solve the moral hazard problem. Similarly, if skills can be later verified then a contract of the form "you will get a base pay commensurate with a low skill consultant, and a bonus if it turns out that you are a high skilled consultant" will offer the consultant in the consulting firm adequate reward, while shielding the company from overpaying for low skilled consultants.

[1] Interestingly, adding hidden information may either mitigate or exacerbate the problems created by hidden action. We explore some of these issues in detail later.

Full text available at: http://dx.doi.org/10.1561/0700000027

When such remedies are unavailable or prohibitively costly, then the information and beliefs that the buyers have about sellers will play a crucial role in determining whether a transaction takes place and the efficiency of trade. Such information and beliefs about the seller's skill and behavior, which we refer to as the seller's "reputation," are a consequence of many things. These include direct observations on past performance, experience with other sellers, reports from third parties, actions that the seller may undertake outside of the transaction, and numerous other factors for which we attempt to provide a taxonomy.

Specifically, focussing first on information conveyed by past transactions, we distinguish between three cases as follows.

Pure Hidden Information (*Section 3*): In this case a seller has no active control over the outcome of the transaction, but sellers vary in their innate ability, or "type." For example, a consultant may be more or less smart, affecting his ability to deliver; a chef may have talent in creating exciting recipes, or may not. As potential buyers observe the output produced by such sellers, they effectively learn over time about the seller's innate skill, and hence we also refer to this situation as "pure learning." In this case the seller's reputation is the buyer's belief about the seller's skill, or type.[2] As a somewhat amusing, yet concrete example, consider the movie *Gigli*. The quality of the movie is now fixed. Neither of the authors has seen this movie to date. In deciding not to watch it, we have beliefs about how much we would enjoy sitting through it based on reports of others (such as the reviewers and trusted friends) who have watched it and reported their (largely negative) experiences. Generally for movies (though possibly not for *Gigli*) some viewers would expect to enjoy it and others not, and so the movie's "reputation" can be seen as the probability with which an audience member would enjoy it.

Pure Hidden Action (*Section 4*): In this case there is only one "type" of seller, but this seller has active control over the outcome of the

[2] Including a discussion of learning in a review of reputation is a somewhat idiosyncratic choice, but while the formal literatures have largely been quite separate, in application at least there is an important and obvious connection between how a buyer learns and a seller's desire to affect what she learns.

Full text available at: http://dx.doi.org/10.1561/0700000027

transaction, and his actions within the transaction are not contractible. For example, a consultant may work hard or slack off; a chef/owner of a restaurant may use expensive fresh and high quality ingredients or instead choose to purchase cheap ones. The hidden action qualifier is that our buyer cannot observe the sellers behavior, and hence must try to infer what the seller will do. As a consequence, in this case, reputation is not about learning some underlying trait of the seller, but instead reflects the buyer's belief about the seller's equilibrium behavior.

Mixed Models (*Section 5*): This more realistic setting includes both hidden information and hidden action where sellers vary in their type and they can unobservably affect the outcome of the transaction. For example, a consultant's ability to successfully improve the company's performance depends on both his unobserved skill and the unobserved effort that he takes; the quality of a meal depends on both the chef's skill and the choices he makes about what kind of ingredients to purchase. In this case the "reputation" is the buyer's belief about the seller's type as well as the equilibrium behavior of the different types of sellers. Hence, in this more realistic setting, reputation includes both a belief about underlying traits and about anticipated equilibrium behavior.

The pure hidden-information approach rests on the idea that there is some underlying truth about sellers that is not manipulable, and buyers are using past performance to learn about this truth. Hence, the method of analysis incorporates learning by buyers as outcomes are revealed. In contrast, the pure moral hazard approach rests on the premise of repeated games with the idea that "what goes around, comes around." That is, if buyers and sellers interact time and time again, then inadequate behavior on part of the sellers can be punished by retaliatory behavior of the buyers: if some seller acts to deliberately cheat some buyer, then the buyers at large can stop interacting with this seller, assuming that information about his behavior is easily accessible. This "carrot and stick" approach is the basic model of a repeated game with complete information. In it, a seller sells repeatedly to one, or many buyers, and the outcome of each transaction is observed by all

Full text available at: http://dx.doi.org/10.1561/0700000027

the participants. The seller has short run incentives to shirk on quality, but will refrain from shirking if long run incentives to perform well are in place. These incentives are typically provided using the standard trigger (or bootstrap) equilibrium, often referred to as a "reputational equilibrium." The mechanism at work is the celebrated "folk theorem."

It is worth noting that the hidden information and mixed-model approaches still incorporate part of the underlying logic of "what goes around, comes around." However, it is not so much based on the notion of a retaliatory punishment, but instead through beliefs that follow a rather appealing process. Following bad outcomes buyers will update their beliefs to accommodate the higher likelihood that poor quality is persistent, and thus will beware of sellers who provided poor quality in the past.

We will begin our review by exploring these three different models for what determines the outcome of a transaction. A few key lessons will emerge from these building blocks, which shed light on four factors that are key in determining the extent to which reputation acts effectively in leading to efficient trade. Specifically, these are: (a) the extent of uncertainty about the seller; (b) the rate at which buyers learn from outcomes, including, for example, the rate of information diffusion among buyers; (c) the seller's discount factor, or value of future interactions; and (d) characteristics of demand that determine how sensitive buyers are to reputation.

We then turn in Sections 6–11 to applications and extensions of these building block ideas. First, we discuss how exogenous institutions — ranging from the existence of markets for reputations, the design of an electronic marketplace with built-in feedback mechanisms, to social norms in a community — affect how well reputational concerns work in achieving efficient market outcomes. In addition to institutions which are exogenous from the perspective of an individual buyer or seller, we discuss actions outside of transactions that the seller might take to influence his reputation or the way that his reputation evolves. Furthermore, the discussion highlights that when discussing "reputation" in the context of a particular application, a researcher must take care in thinking through precisely the question of "reputation for what."

Full text available at: http://dx.doi.org/10.1561/0700000027

We conclude our review by raising concerns not adequately captured by our basic models, as well as the difficulty in applying some of the theoretical exercises to empirical scrutiny. Specifically, we briefly introduce and discuss a recent literature on "reputation for experts" where in contrast to the discussion above, even following a transaction, the outcome may be hard to classify as "good news" or "bad news," and so a seller may be tempted to undertake actions to satisfy the buyer's expectations regardless of the extent to which this is the right outcome from an efficiency perspective. We discuss implications of having multiple dimensions of skills or ability and multi-dimensional reputations. We also briefly highlight that while the bulk of the literature has focused on "vertical" (quality) aspects or the extent to which a seller is "good," a seller may also take actions to affect "horizontal" reputation or buyers beliefs about the extent to which the seller will match their tastes.

Any survey will be incomplete, and this one reflects our overlapping interests in this topic, as well as our personal judgment on where the boundaries of this topic lie. In this regard, it is worth highlighting that there are a number of other recent reviews. In particular, Cripps (2006) provides a short but useful survey on building block models, Mailath and Samuelson (2006) provide a detailed treatment, and Macleod (2007) provides a complimentary survey that highlights a contractual interpretation of reputation and the interaction between formal contracts and reputation effects.

Full text available at: http://dx.doi.org/10.1561/0700000027

References

Aaker, D. and K. Keller (1990), 'Buyer evaluations of brand extensions'. *Journal of Marketing* **54**, 27–41.

Abreu, D. and R. Sethi (2003), 'Evolutionary stability in a reputational model of bargaining'. *Games and Economic Behavior* **44**, 195–216.

Aghion, P., P. Bolton, C. Harris, and B. Jullien (1992), 'Optimal learning by experimentation'. *Review of Economic Studies* **58**, 621–654.

Akerlof, G. A. (1970), 'The market for "lemons": Quality uncertainty and the market mechanism'. *Quarterly Journal of Economics* **84**, 488–500.

Allen, F. (1984), 'Reputation and product quality'. *RAND Journal of Economics* **15**, 311–327.

Almeida Costa, L. and L. Vasconcelos (2007), 'Share the fame or share the blame? The reputational implications of partnerships'. Mimeo, NOVA.

Anand, B. and R. Shachar (2004), 'Brands as beacons: A new source of loyalty to multiproduct firms'. *Journal of Marketing Research* **41**, 135–150.

Anand, B. and R. Shachar (2005), 'Advertising the matchmaker'. Mimeo, Harvard Business School.

Full text available at: http://dx.doi.org/10.1561/0700000027

Anderson, A. and L. Smith (2006), 'Assortative matching and reputation'. Cowless Foundation Discussion Paper No. 1553.

Andersson, F. (2002), 'Pooling reputations'. *International Journal of Industrial Organization* **20**, 715–730.

Avery, C., P. Resnick, and R. Zeckhauser (1999), 'The market for evaluations'. *American Economic Review* **89**, 564–584.

Bagwell, K. (2007a), 'The economic analysis of advertising'. In: M. Armstrong and R. Porter (eds.): *Handbook of Industrial Organization*, Vol. 3, Chapter 8. North Holland, pp. 1701–1844.

Bagwell, K. (2007b), 'Signaling and entry deterrence: A multidimensional analysis'. *The RAND Journal of Economics* **38**(3), 670–697.

Bajari, P. and A. Hortaçsu (2004), 'Economic insight from internet auctions'. *Journal of Economic Literature* **42**, 457–486.

Balachander, S. and S. Ghose (2003), 'Reciprocal spillover effects: A strategic benefit of brand extensions'. *Journal of Marketing* **67**, 4–13.

Banerjee, A. V. (1992), 'A simple model of herd behavior'. *Quarterly Journal of Economics* **107**, 797–817.

Bar-Isaac, H. (2003), 'Reputation and survival: Learning in a dynamic signalling model'. *Review of Economic Studies* **70**, 231–251.

Bar-Isaac, H. (2004), 'Reputation and professional services: Survival, teams and incentives'. Ph.D Thesis, University of London.

Bar-Isaac, H. (2005), 'Imperfect competition and reputational commitment'. *Economics Letters* **89**, 167–173.

Bar-Isaac, H. (2007), 'Something to prove: Choosing teamwork to create reputational incentives for individuals'. *RAND Journal of Economics* **38**, 495–511.

Bar-Isaac, H. (2008), 'Transparency, career concerns, and incentives for acquiring expertise'. Working Paper, NYU.

Bar-Isaac, H. and J. Ganuza (2008), 'Recruitment, training and career concerns'. *Journal of Economics and Management Strategy,* forthcoming.

Bar-Isaac, H. and J. Hörner (2008), 'Reputation and specialization'. In progress, NYU.

Full text available at: http://dx.doi.org/10.1561/0700000027

Benabou, R. and G. Laroque (1992), 'Using privileged information to manipulate markets: Insiders, gurus, and credibility'. *Quarterly Journal of Economics* **107**, 921–958.

Bergemann, D. and J. Välimäki (1996), 'Learning and strategic pricing'. *Econometrica* **64**, 1125–1149.

Bergemann, D. and J. Välimäki (2006), 'Dynamic price competition'. *Journal of Economic Theory* **126**, 232–263.

Bernheim, B. D. and M. D. Whinston (1990), 'Multimarket contact and collusive behavior'. *Rand Journal of Economics* **21**, 1–26.

Biglaiser, G. (1993), 'Middlemen as experts'. *Rand Journal of Economics* **24**, 212–223.

Biglaiser, G. and J. W. Friedman (1994), 'Middlemen as guarantors of quality'. *International Journal of Industrial Organization* **12**, 509–533.

Bikchandani, S., D. Hirschleifer, and I. Welch (1992), 'A theory of fads, fashion, custom, and cultural change as informational cascades'. *The Journal of Political Economy* **100**, 992–1026.

Blanes-i-Vidal, J. (2007), 'Delegation of decision rights and the winner's curse'. *Economics Letters* **94**, 163–169.

Bolton, P. and C. Harris (1999), 'Strategic Experimentation'. *Econometrica* **67**, 349–374.

Borenstein, S. and M. B. Zimmerman (1988), 'Market incentives for safe commercial airline operation'. *American Economic Review* **78**, 913–935.

Bose, S., G. Orosel, M. Ottaviani, and L. Vesterlund (2006), 'Dynamic monopoly pricing and herding'. *RAND Journal of Economics* **37**, 910–928.

Brandenburger, A. and B. Polak (1996), 'When managers cover their posteriors: Making the decisions the market wants to see'. *RAND Journal of Economics* **27**, 523–541.

Byzalov, D. and R. Shachar (2004), 'The risk reduction role of advertising'. *Quantitative Marketing and Economics* **2**, 283–320.

Cabral, L. (2000), 'Stretching firm and brand reputation'. *Rand Journal of Economics* **31**, 658–673.

Cabral, L. (2008), 'Umbrella branding with imperfect observability and moral hazard'. Mimeo, NYU.

Full text available at: http://dx.doi.org/10.1561/0700000027

Cabral, L. and A. Hortaçsu (2006), 'The dynamics of seller reputation: Theory and evidence from eBay'. Mimeo, NYU.

Cai, H. and I. Obara (2006), 'Firm reputation and horizontanl integration'. Mimeo, UCLA.

Casas-Arce, P. (2005), 'Career tournaments'. Working Paper, Universitat Pompeu Fabra.

Chevalier, J. and G. Ellison (1999), 'Career concerns of mutual fund managers'. *Quarterly Journal of Economics* **114**, 389–432.

Choi, J. P. (1998), 'Brand extension as informational leverage'. *Review of Economic Studies* **65**, 655–669.

Choi, J. P. and D. S. Jeon (2007), 'A leverage theory of reputation building with co-branding: Complementarities in reputation building'. Working Paper, Michigan State University.

Chu, W. and W. Chu (1994), 'Signaling quality by selling through a reputable retailer: An example of renting the reputation of another agent'. *Marketing Science* **13**, 177–189.

Crawford, V. and J. Sobel (1982), 'Strategic information transmission'. *Econometrica* **50**, 1431–1451.

Cremer, J. (1986), 'Cooperation in ongoing organizations'. *Quarterly Journal of Economics* **101**, 33–50.

Cripps, M. W. (2006), 'Reputation'. *New Palgrave Dictionary of Economics,* second edition.

Cripps, M. W., G. J. Mailath, and L. Samuelson (2004), 'Imperfect monitoring and impermanent reputation'. *Econometrica* **72**(2), 407–432.

Dana, Jr., J. D. and Y.-F. Fong (2007), 'Product quality, reputation, and tacit collusion'. Mimeo, Kellogg School of Management.

Dana, Jr., J. D. and K. Spier (2007), 'Bundling and product reputation'. Mimeo, Kellogg School of Management.

Deb, J. (2007), 'Observability and sorting in a market for names'. Mimeo, Kellogg School of Management.

Dellarocas, C. (2006), 'Reputation mechanisms'. In: T. Hendershott (ed.): *Handbook on Information Systems and Economics*. Elsevier Publishing, pp. 629–660.

Dellarocas, C., F. Dini, and G. Spagnolo (2007), 'Designing reputation mechanisms'. In: N. Dimitri, G. Piga, and G. Spagnolo (eds.):

Full text available at: http://dx.doi.org/10.1561/0700000027

Handbook of Procurement, Chapter 18. Cambridge University Press, pp. 446–482.

Dewatripont, M., I. Jewitt, and J. Tirole (1999a), 'The economics of career concerns, Part I: Comparing information structures'. *Review of Economic Studies* **66**, 183–198.

Dewatripont, M., I. Jewitt, and J. Tirole (1999b), 'The economics of career concerns, Part II: Application to missions and accountability of government agencies'. *Review of Economic Studies* **66**, 99–217.

Diamond, D. W. (1989), 'Reputation acquisition in debt markets'. *Journal of Political Economy* **97**, 828–862.

Dixit, A. (2004), *Lawlessness and Economics: Alternative Modes of Governance*. Princeton University Press.

Ekmekci, M. and A. Wilson (2007), 'A note on reputation effects with finite memory'. Mimeo, NYU.

Ellison, G. (1994), 'Cooperation in the prisoner's dilemma with anonymous random matching'. *Review of Economic Studies* **61**, 567–588.

Ely, J., D. Fudenberg, and D. K. Levine (2008), 'When is reputation bad?'. *Games and Economic Behavior* **63**, 498–526.

Ely, J. and J. Välimäki (2003), 'Bad reputation'. *Quarterly Journal of Economics* **118**, 785–814.

Erdem, T. (1998), 'An empirical analysis of umbrella branding'. *Journal of Marketing Research* **65**, 655–669.

Felli, L. and C. Harris (1996), 'Job matching, learning and firm-specific human capital'. *Journal of Political Economy* **104**, 838–868.

Fudenberg, D. and D. K. Levine (1989), 'Reputation and equilibrium selection in games with a patient player'. *Econometrica* **57**, 759–778.

Fudenberg, D. and D. K. Levine (1992), 'Maintaining a reputation when strategies are imperfectly observed'. *Review of Economic Studies* **59**, 561–579.

Fudenberg, D., D. K. Levine, and E. Maskin (1994), 'The folk theorem in repeated games with imperfect public information'. *Econometrica* **62**, 997–1039.

Fudenberg, D. and E. Maskin (1986), 'Folk theorem for repeated games with discounting or with incomplete information'. *Econometrica* **54**, 533–554.

Full text available at: http://dx.doi.org/10.1561/0700000027

Fudenberg, D. and J. Tirole (1986), 'A "signal-jamming" theory of predation'. *The RAND Journal of Economics* **17**, 366–376.

Fudenberg, D. and J. Tirole (1991), *Game Theory*. The MIT Press.

Gale, D. and R. Rosenthal (1994), 'Price and quality cycles for experience goods'. *RAND Journal of Economics* **25**, 590–607.

Garella, P. and M. Peitz (2007), 'Alliances between competitors and consumer information'. *Journal of the European Economic Association* **5**, 823–845.

Gibbons, R. and K. J. Murphy (1992), 'Optimal incentive contracts in the presence of career concerns: Theory and evidence'. *Journal of Political Economy* **100**, 468–505.

Greif, A. (1989), 'Reputation and coalitions in medieval trade: Evidence on the maghribi traders'. *Journal of Economic History* **49**, 857–882.

Greif, A. (2006), *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*. Cambridge University Press.

Greif, A., P. Milgrom, and B. Weingast (1994), 'Commitment, coordination, and enforcement: The case of the merchant guilds'. *Journal of Political Economy* **102**, 745–776.

Hakenes, H. and M. Peitz (2007), 'Observable reputation trading'. *International Economic Review* **48**, 693–730.

Hakenes, H. and M. Peitz (2008a), 'Umbrella branding and external certification'. *European Economic Review*, forthcoming.

Hakenes, H. and M. Peitz (2008b), 'Umbrella branding and the provision of quality'. *International Journal of Industrial Organization* **26**, 546–556.

Harrington, J. E. (1993), 'Economic policy, economic performance, and elections'. *American Economic Review* **83**, 27–42.

Harrington, J. E. (1995), 'Cooperation in a one-shot prisoners' dilemma'. *Games and Economic Behavior* **8**, 364–377.

Harstad, B. (2007), 'Organizational form and the market for talent'. *Journal of Labor Economics* **25**, 581–611.

Holmström, B. (1999), 'Managerial incentive problems — A dynamic perspective'. *Review of Economic Studies* **66**, 169–182. (Originally published in 1982 in *Essays in Honor of Professor Lars Wahlback*).

Full text available at: http://dx.doi.org/10.1561/0700000027

Holmström, B. and Ricart-i-Costa (1986), 'Managerial incentives and capital management'. *Quarterly Journal of Economics* **101**, 835–860.

Hong, H. and J. D. Kubik (2003), 'Analyzing the analysts: Career concerns and biased earnings forecasts'. *Journal of Finance* **58**, 313–351.

Hong, H., J. D. Kubik, and A. Solomon (2000), 'Security analysts' career concerns and herding of earnings forecasts'. *RAND Journal of Economics* **31**, 121–144.

Hörner, J. (2002), 'Reputation and competition'. *American Economic Review* **92**, 644–663.

Hubbard, T. N. (2002), 'How do buyers motivate experts? Reputational incentives in an auto repair market'. *Journal of Law and Economics* **45**, 437–468.

Jackson, M. O. (2006), 'The economics of social networks'. In: R. Blundell, W. Newey, and T. Persson (eds.): *Advances in Economics and Econometrics, Theory and Applications: Ninth World Congress of the Econometric Society*, Vol. 1, Chapter 1. Cambridge University Press.

Jeon, S. (1996), 'Moral hazard and reputational concerns in teams: Implications for organizational choice'. *International Journal of Industrial Organization* **14**, 297–315.

Jin, G. Z. and P. Leslie (2003), 'The effect of information on product quality: Evidence from restaurants hygiene grade cards'. *Quarterly Journal of Economics* **118**, 409–451.

Jin, G. Z. and P. Leslie (2008), 'Reputational incentives for restaurant hygiene'. *American Economic Journal* (*Microeconomics*), forthcoming.

Kandori, M. (1992), 'Social norms and community enforcement'. *Review of Economic Studies* **59**, 63–80.

Kandori, M. (2006), 'Repeated games'. *The New Palgrave Dictionary of Economics,* second edition.

Klein, B. and K. B. Leffler (1981), 'The role of market forces in assuring contractual performance'. *Journal of Political Economy* **89**, 615–641.

Full text available at: http://dx.doi.org/10.1561/0700000027

Klein, T., C. Lambertz, G. Spagnolo, and K. Stahl (2006), 'Last-minute feedback'. CEPR Discussion Paper No. 5693.

Koch, A. and E. Peyrache (2005), 'Tournaments, individualized contracts and career concerns'. IZA DP number 1841.

Kovrijnykh, R. (2007), 'Career uncertainty and dynamic incentives'. Working Paper, University of Chicago.

Közsegi, B. and W. Li (2008), 'Drive and talent'. *Journal of the European Economic Association* **6**(1), 210–236.

Kranton, R. E. (2003), 'Competition and the incentive to produce high quality'. *Economica* **70**, 385–404.

Kreps, D. (1990), 'Corporate culture and economic theory'. In: J. Alt and K. Shepsle (eds.): *Perspectives on Positive Political Economy.* Cambridge: Cambridge University Press, pp. 90–143.

Kreps, D., P. R. Milgrom, D. J. Roberts, and R. Wilson (1982), 'Rational cooperation in the finitely repeated prisoner's dilemma'. *Journal of Economic Theory* **27**, 245–252.

Kreps, D. and R. Wilson (1982), 'Reputation and imperfect information'. *Journal of Economic Theory* **27**, 253–279.

Kreps, D. M. and J. Sobel (1994), 'Signalling'. In: R. Aumann and S. Hart (eds.): *Handbook of Game Theory, Volume II.* Elsevier, pp. 849–868.

Levin, J. and S. Tadelis (2005), 'Profit sharing and the role of professional partnerships'. *Quarterly Journal of Economics* **120**, 131–171.

Levy, G. (2004), 'Anti-herding and strategic consultation'. *European Economic Review* **48**, 503–525.

Levy, G. (2007), 'Decision making in committees: Transparency, reputation and voting rules'. *American Economic Review* **97**, 150–168.

Li, W. (2007), 'Peddling influence through intermediaries: Propaganda'. Riverside working paper, University of California.

Lippert, S. and G. Spagnolo (2007), 'Networks of relations, word-of-mouth communication, and social capital'. SSE/EFI Working Paper in Economics and Finance No. 570.

Liu, Q. (2007), 'Information acquisition and reputation dynamics'. Mimeo, University of Pennsylvania.

Lizzeri, A. (1999), 'Information revelation and certification intermediaries'. *RAND Journal of Economics* **30**, 214–231.

Full text available at: http://dx.doi.org/10.1561/0700000027

Macleod, B. (2007), 'Reputations, relationships and the enforcement of incomplete contracts'. *Journal of Economic Literature* **45**, 595–628.

Mailath, G. J. and L. Samuelson (2001), 'Who wants a good reputation?'. *Review of Economic Studies* **68**, 415–441.

Mailath, G. J. and L. Samuelson (2006), *Repeated Games and Reputations: Long-Run Relationships*. Oxford University Press.

Martinez, L. (2008), 'Reputation, career concerns, and job assignments'. *B.E. Journal of Theoritical Economics*, forthcoming.

Marvel, H. and L. Ye (2008), 'Trademark sales, entry, and the value of reputation'. *International Economic Review* **49**, 547–576.

Maskin, E. and J. Tirole (2001), 'The politician and the judge: Accountability in government'. Working Paper, Toulouse University.

McKenna, C. (2006), *The World's Newest Profession: Management Consulting in the Twentieth Century*. Cambridge University Press.

Meyer, M. A. (1994), 'The dynamics of learning with team production: Implications for task assignment'. *Quarterly Journal of Economics* **109**, 1157–1184.

Miklós-Thal, J. (2006), 'On the signaling and feedback effects of umbrella branding'. Mimeo, University of Toulouse.

Milgrom, P., D. North, and B. Weingast (1990), 'The role of institutions in the revival of trade: The medieval law merchant, private judges, and the champagne fairs'. *Economics and Politics* **2**, 1–23.

Milgrom, P. R. and D. J. Roberts (1982), 'Predation, reputation and entry deterrence'. *Journal of Economic Theory* **27**, 280–312.

Milgrom, P. R. and J. Roberts (1986), 'Price and advertising signals of product quality'. *Journal of Political Economy* **94**, 796–821.

Miller, N., P. Resnick, and R. Zeckhauser (2005), 'Eliciting informative feedback: The peer prediction method'. *Management Science* **51**, 1359–1373.

Monte, D. (2007), 'Reputation and bounded memory'. Mimeo, Yale University.

Montgomery, C. and B. Wernerfelt (1992), 'Risk reduction and umbrella branding'. *Journal of Business* **65**, 31–50.

Morris, S. (2001), 'Political correctness'. *Journal of Political Economy* **109**, 231–265.

Full text available at: http://dx.doi.org/10.1561/0700000027

Morrison, A. D. and W. J. Wilhelm, Jr. (2004), 'Partnership firms, reputation and human capital'. *American Economic Review* **94**, 1682–1692.

North, D. C. (1990), *Institutions, Institutional Change and Economic Performance*. Cambridge University Press.

Okuno-Fujiwara, M. and A. Postlewaite (1995), 'Social norms and random matching games'. *Games and Economic Behavior* **9**, 79–109.

Ortega, J. (2003), 'Power in the firm and managerial career concerns'. *Journal of Economics and Management Strategy* **12**, 1–29.

Ottaviani, M. and P. Sørensen (2006a), 'Professional advice'. *Journal of Economic Theory* **126**, 120–142.

Ottaviani, M. and P. Sørensen (2006b), 'Reputational cheap talk'. *RAND Journal of Economics* **37**, 155–175.

Ottaviani, M. and P. Sørensen (2006c), 'The strategy of professional forecasting'. *Journal of Financial Economics* **81**, 441–466.

Peppall, L. and D. J. Richards (2002), 'The simple economics of brand-stretching'. *Journal of Business* **75**, 535–552.

Perri, T. J. and E. B. Rasmussen (2001), 'Can high prices ensure product quality when buyers do not know the seller's cost?'. *Economic Inquiry* **39**, 561–567.

Phelan, C. (2006), 'Public trust and government betrayal'. *Journal of Economic Theory* **130**, 27–43.

Phelan, C. and A. Skrzypacz (2006), 'Private monitoring with infinite histories'. Federal Reserve Bank of Minneapolis, Research Department Staff Report 383.

Prat, A. (2005), 'The wrong kind of transparency'. *American Economic Review* **95**, 862–877.

Prendergast, C. and L. Stole (1996), 'Impetuous youngsters and jaded oldtimers'. *Journal of Political Economy* **104**, 1105–1134.

Richman, B. (2006), 'How communities create economic advantage: Jewish diamond merchants in New York'. *Law and Social Inquiry* **31**, 383–420.

Rob, R. and A. Fishman (2005), 'Is bigger better? Customer base expansion through word-of-mouth reputation'. *Journal of Political Economy* **113**, 1146–1162.

Full text available at: http://dx.doi.org/10.1561/0700000027

Rosen, S. (1981), 'The economics of superstars'. *American Economic Review* **71**, 845–858.

Rothschild, M. (1974), 'A two-armed bandit theory of market pricing'. *Journal of Economic Theory* **9**, 185–202.

Sappington, D. E. M. and B. Wernerfelt (1985), 'To brand or not to brand? A theoretical and empirical question'. *Journal of Business* **58**, 279–293.

Scharfstein, D. and J. Stein (1990), 'Herd behavior and investment'. *American Economic Review* **80**, 465–479.

Shapiro, C. (1983), 'Premiums for high quality products as returns to reputations'. *Quarterly Journal of Economics* **98**, 659–680.

Sobel, J. (1985), 'A theory of credibility'. *Review of Economic Studies* **52**, 557–573.

Spence, M. (1973), 'Job market signaling'. *Quarterly Journal of Economics* **87**, 355–374.

Spulber, D. (1999), *Market Microstructure: Intermediaries and the Theory of the Firm*. Cambridge University Press.

Stein, J. (1989), 'Efficient capital markets, inefficient firms: A model of myopic corporate behavior'. *Quarterly Journal of Economics* **104**, 655–669.

Sullivan, M. (1990), 'Measuring image spillovers in umbrella-branded products'. *Journal of Business* **63**, 309–329.

Tadelis, S. (1999), 'What's in a name? Reputation as a tradeable asset'. *American Economic Review* **89**, 548–563.

Tadelis, S. (2002), 'The market for reputations as an incentive mechanism'. *Journal of Political Economy* **92**, 854–882.

Tadelis, S. (2003), 'Firm reputations with hidden information'. *Economic Theory* **110**, 854–882.

Tirole, J. (1996), 'A theory of collective reputations (with applications to the persistence of corruption and to firm quality)'. *Review of Economic Studies* **63**, 1–22.

van Damme, E. (1992), 'Refinements of Nash equilibrium'. In: J.-J. Laffont (ed.): *Advances in Economic Theory: Sixth World Congress* Vol I. 28 June 2007: Cambridge University Press, Cambridge Collections Online, Cambridge University Press. http://cco.cambridge.org/extract?id=ccol0521416663_CCOL0521416663A003.

Full text available at: http://dx.doi.org/10.1561/0700000027

Wang, T. (2007), 'The reputation of an organization and its dynamics'. Mimeo, London School of Economics.

Wasserman, S. and K. Faust (1995), *Social Network Analysis: Methods and Applications*. Cambridge University Press.

Wernerfelt, B. (1988), 'Umbrella branding as a signal of product quality: An example of signaling by posting a bond'. *RAND Journal of Economics* **19**, 458–466.

Zwiebel, J. (1995), 'Corporate conservatism and relative compensation'. *Journal of Political Economy* **103**, 1–25.