

**PUBLICITY AND THE COST OF CRYING WOLF:
HOW INFORMAL INSTITUTIONS ENABLE MARKET SIGNALS**

Mark Thomas Kennedy
Marshall School Business
University of Southern California
Hoffman Hall 723
Los Angeles, CA 90089-0808
Tel: (213) 821-5668
Fax: (213) 740-3582
mark.kennedy@marshall.usc.edu

Robert M. Salomon
Stern School of Business
New York University
44 West 4th St., KMC 7-59
New York, NY 10012
Tel: (212) 998-0223
rsalomon@stern.nyu.edu

Edward J. Zajac
Kellogg School of Management
Northwestern University
2001 Sheridan Road
Evanston, IL 60208
Tel: (847) 491-8272
e-zajac@kellogg.northwestern.edu

We thank Peer Fiss, Paul Adler, Tim Pollock, Violina Rindova, and Kyle Mayer for helpful comments on this research.

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ABSTRACT

While strategy research shows that media coverage can affect firm reputation and performance, less is known about the extent to which publicity efforts yield coverage. While publicity could attract coverage by signaling that a story deserves coverage, the relatively low cost of some publicity appears to fall short of the credible commitment of resources required of signals. To explain publicity's effect on coverage, we conceptualize source-reporter interactions as a social exchange system with a game-like structure in which the institutions and incentives allow firms' calls for media coverage to work until, like the boy who cried wolf, firms that call for attention too often are ignored. Consistent with this argument, we hypothesize an inverted U-shaped relationship between coverage and publicity and find support for this hypothesis in analyses of press releases and media coverage of computer workstation producers from 1980-1990. This research highlights the role informal institutions play in governing media information flows and, in particular, the cost of crying wolf, a factor that gives signal value to stories that might otherwise be little more than cheap talk.

(172 words)

In monopolistically competitive markets with differentiation (Chamberlain 1933), unique offerings define market positions and can become sources of competitive advantage (McGahan and Porter 1997; Porter 1980). Whether such positions arise as accidents of history (Arthur 1985; David 1985), through the emergence of technical standards (Katz and Shapiro 1985, 1986), or via the development of distinctive technological, marketing, and managerial intangibles (Peteraf, 1993; Wernerfelt, 1984; Mahoney and Pandian, 1992), they are most valuable when widely available in the minds of customers, rivals and other relevant constituents (Kuran and Sunstein 1999). In particular, when firms are sufficiently widely known and firmly associated with products and product market categories that attract the attention of customers and competitors, the resulting competitive positions provide advantage (Lieberman and Montgomery 1988; Schmalensee 1978).

While scholars have long recognized that innovative products, firm-specific capabilities, and industry structure can form the basis of a meaningful advantage (Afuah 2002; McGahan and Porter 1997; Peteraf 1993; Wernerfelt 1984), less is known about the process by which these factors become common knowledge and, especially, about the affect of firms' efforts to publicize information about the market positions they are trying to establish.

What is known, however, suggests that media coverage affects firm performance and competitive advantage. The link between media attention and advantage is supported by corporate reputation studies (see Fombrun 1996; Fombrun and Shanley 1990) and related work that connects coverage to firm performance (Deephouse 2000a; Pollock, Rindova and Maggitt 2008; Rindova and Fombrun 1999). For example, Deephouse (2000b) demonstrated that media coverage of specific banking firms was positively related to ROA. Similarly, Barron (1998) showed that media reports of loan sharking activity increased the growth rates of consumer loan providers. Rao (1994: 33) linked increases in media reports about contest results in the automobile industry to an increased likelihood of survival. In the context of initial public offerings (IPOs), Pollock and Rindova (2003) found that media coverage legitimates investors' impression of issuers, and that perceived legitimacy was associated with higher IPO prices. In the context of business school rankings, research in this same tradition shows that media prominence contributes to

higher rankings and the ability to command prices higher than expected based on reputations for quality (Rindova et al. 2005).

Much less is known, however, about the extent to which firms' efforts to attract publicity yield media coverage. While the fact that firms spend money, effort and time on publicity suggests there is some effect, both information economics and the rules of journalism offer reasons why publicity ought *not* to work. In information economics, signaling theory (Spence 2002) defines signals as announcements of strategic intentions backed by significant investment. If large enough to be viewed as evidence of credible commitment, advertising investments, for example can function as influential market signals (Grossman and Shapiro 1984). Although firms' calls to attract reporter attention could also be signals, the direct costs of simple publicity—issuing a press release and making some calls to editors and reporters—can be as little as a few hundred dollars. For large corporations, such expenditures are arguably closer to the economic ideal of “cheap talk”—that is, talk that is non-binding, unverifiable, and used as often as desired (Farrell and Rabin 1996). With more elaborate publicity campaigns, costs can run into the millions, at which point it might be more reasonable to see them as signals, similar to advertising (Grossman and Shapiro 1984). However, because global spending on PR amounts to less than 2% of global spending on total advertising¹, the magnitude of spending may not be enough to explain why PR affects coverage, especially since the journalism profession espouses norms that require reporters to maintain strict independence from their sources and advertisers (Schudson 2001). For the most part, reporters espouse a professional ethos that dictates a wary approach to big spenders on public relations, or PR (DeLorme and Felder 2003).

This raises the two questions this research attempts to address—one empirical, one theoretical. Empirically, do firms' efforts to attract media coverage work? Theoretically, if they do, why would reporters risk the consequences of violating their professional norms by covering firms that signal they

¹ According to WPP's GroupM, global advertising spending for 2009 is approximately \$450B; in contrast, the Public Relations Society of America estimated global spending on public relations at \$7B in 2007, the last year for which it made such an estimate. According to the US Department of Commerce, public relations spending is less than 10% of total advertising and market services, which does not include the cost of advertising space.

have something to say—especially when the costs of such “signals” are low enough that they might be considered little more than cheap talk?

To address these questions, we draw on social exchange theory and information economics to argue that even when publicity is inexpensive enough that it looks like little more than cheap talk, it can function as a signal that attracts coverage because the informal institutions of journalism create a real cost for firms that call for reporter attention too often. While relying on pre-packaged material provided by sources’ press releases can significantly cut the information-gathering burden of reporting, professional norms and organizational codes of conduct for reporters explicitly forbid trading coverage for information or access, and these non-legal rules are typically backed up by the threat of censure or job loss. Thus, while there are productivity pay-offs to using material volunteered by sources, reporters must eventually stop responding to sources that call for attention too often by refusing to cover their potential stories. In effect, sources that violate the institutions governing source-reporter interaction are treated like the boy who cried wolf—they get ignored after calling for help too often.

We test this hypothesis using an extensive longitudinal panel of 28,292 press releases and news stories covering 74 firms from the computer workstation market between 1980 and 1990—a period during which the lack of Internet-based tactics made press releases more important than they are today. In our analyses of coverage, findings support our hypothesis by revealing an inverted U-shaped relationship between media coverage and attempts to solicit it, as measured by the number of press releases. However, firms that retain public relations agencies are able to avoid violations of the governing source-reporter exchange.

As we will elaborate after presenting our argument and empirical analyses, these findings contribute to theory by showing how informal institutions create a cost of crying wolf that allows even the relatively cheap talk of publicity to function as a signal that attracts media coverage—as long as it is not overused. More generally, we explain the effects of publicity as the result of a flexible social exchange system supported by the codes of conduct that govern source-reporter interaction, and we argue that

informal institutions of this kind offer a potentially fruitful meeting ground for economic and sociological approaches to institutions and the role they play in governing economic exchange.

Before presenting and testing our theory and hypotheses, we set the context for our theoretical argument and hypotheses by explaining the institutions and incentives that govern reporter-source interactions.

CONTEXT: REPORTER-SOURCE EXCHANGE

While journalism's institutionalized role norms may prohibit direct payment for information, the familiar economic maxim still applies: there is no such thing as a *free* lunch (Friedman 1975). In recognition of this, we conceptualize the market for news and analysis as a system of information flows in which firms participate both as consumers and producers, albeit under special constraints imposed by journalists' codes of conduct. In effect, market news and analysis is an economy of exchange that depends on the goals of the parties involved, and the information flows among them (Polanyi [1944] 1985). Besides reporters and their audiences, these parties also include reporters' sources at firms and, in some cases, hired public relations representatives as well.

Institutions of Journalism

In the twentieth century, journalism emerged as a profession and important institution in political economies, in part thanks to the adoption of roles and rules that allow reporters to raise and frame issues that dominate public discourse (Schudson 1995). This influence is rooted in norms of independence, objectivity, and integrity. The "theory of journalism" states that "its practitioners must maintain an independence from those they cover" (Rosentiel and Kovach 2001). Translated into policy, the New York Times (2004) instructs its reporters that they should neither "promise favorable coverage in return for cooperation" nor "pay for interviews or unpublished documents." Similarly, in its *Code of Ethics*, the Society of Professional Journalists states, "Journalists should be free of any obligation other than the public's right to know" (1996). Taken together, these rules and norms enable journalists to influence what

the public accepts as common knowledge (Neuman, Just and Crigler 1992)—or as fact. This is important for our study because, as mentioned earlier, positions of advantage are most powerful when widely understood and agreed upon.

At media outlets that subscribe to the ideals of a free press, reporters generally view themselves as members of a heroic profession known for independence (Deuze 2005). Operating in what Boltanski and Thévenot (1991) call the world of the inspired, a reporter's value is judged according to a logic that emphasizes the truth or beauty of reporters' stories. Even when employed by organizations that clearly value financial returns, legitimate news outlets feature structures that insulate reporters from the financial considerations of the world of the market. Specifically, reporters answer to editors who shield them by defending a "Chinese wall" between editorial departments and other parts of the organization (for a history, see Schudson 1978). In addition to this protection from their employers, reporters follow codes of conduct that require them to avoid personal or social obligations to sources (Schudson 2001). These structural arrangements and rules support media influence by giving audiences confidence that the press is free to critique the interests and actions of sources *and* media organizations. Speaking truth to power is essential to journalism's ethos. Reporters thus celebrate demonstrations of integrity that involve critiquing power, and reporting routines feature a search for oppositional viewpoints (Eliasoph 1988).

Independence allows reporters to be tastemakers who verify or reject claims about what the public wants (Hirsch 1972), serving as arbiters of quality and interpreters of market categories (Zuckerman 1999). Among journalists, business reporters are often seen as less independent than, for example, political reporters, because alienating corporate sources risks losing the newsmaker access that makes for good stories. Nonetheless, reporters earn recognition and reputations for doing important stories that are timely, faithful to the facts, and compelling in presentation, and scandals can be very compelling. While sources tend to feel betrayed by stories that air their dirty laundry, the dirtier the laundry, the harder it is for reporters to justify keeping it from their audience.

Incentives for Firms

For firms, the media's power offers a tantalizing benefit: reporters can convey almost instant credibility to their claims and help them advance their interests (Jackall and Hirota 2000). Aware of this power, firms seek to provide journalists with information that, if passed on, could shape collective understanding of the relevant markets' competitive landscapes in their advantage. This happens by becoming closely associated with the market concept (Lieberman and Montgomery 1988) and by building positive reputation (Rindova and Fombrun 1999). Because media coverage supports development of collective agreement about markets and market positions (Kennedy 2008), it can help firms in new markets to position themselves as dominant players and, in the process, even shape consumer preferences (Carpenter and Nakamoto 1989). The hope is that the firm will be able to influence the media to help it make a case for why its products will (or should) become the industry standard (Schilling 2002).

As the journalism profession developed a culture featuring strong independence norms (Schudson 1978), firms face a lack of control over journalists' stories that makes them understandably cautious about granting reporters too much information—whether in the form of unfettered access to senior executives or other sources of potentially valuable perspective on the firms' activities. This is because firms risk adverse coverage if they allow journalists too much access. As a result, firms are especially careful in their dealings with reporters. Reporters seeking information from firms are often forced to rely on carefully filtered information. Following a logic of resource dependence (Pfeffer and Salancik 1978), firms seeking to portray themselves in the best possible light thus attempt to influence both the content and tone of the media coverage they receive. Interactions between reporters and sources therefore amount to a social exchange system in which distinct and complementary roles govern how both parties to the exchange collaborate to produce a valuable public good.

THEORY AND HYPOTHESES

To lay a theoretical foundation for hypothesizing a curvilinear relationship between media attention and firms' calls for it, we must briefly expand on the distinction between signaling and cheap

talk. As Akerlof (1970) famously observed, exchange situations where one party has information or knowledge not easily ascertained or verified by another create uncertainties that freeze markets unless some sort of signal is used to reduce uncertainty that might otherwise impede exchange. To explain how this works in labor markets, Spence (1973) developed the notion of a signaling game in which job candidates seeking the attention of prospective employers indicate their worth through, for example, making and disclosing investments in education that suggest promise. When such disclosures are credible, they convey the likely value of candidates, thereby functioning as signals that enable labor markets to allocate jobs to candidates. Cost is a central feature of Spence's definition of a signal because it adds tangible expense to the consequences of not following through.

In contrast, the literature on so-called "cheap talk" explores the value of information disclosure even when it is not obviously costly by exploring how ordinary communication affects payoffs in strategic interactions (e.g., Farrell 1987; Farrell and Gibbons 1989, 1995). As Farrell and Rabin (1996: 104) explain, this perspective takes the premise that "most information sharing is not done through Spence-style signaling [or] through the price system" but "through ordinary, informal talk." In this approach, cheap talk is defined as a theoretically unlimited stream of nonbinding and unverifiable communiqués that may nonetheless affect the beliefs of those who receive them (Farrell and Rabin 1996: 116). Marshaling evidence from a series of models and experiments to establish the viability of this pragmatic approach to the role of language in coordination (e.g., Cooper et al. 1992; Farrell and Gibbons 1995; Rabin 1990, 1993), Farrell and Rabin argue that talk is good for communicating "as much as is consistent with avoiding incentives to lie" (1996: 116). In other words, talk matters when there are sanctions to betrayals of trust. When it comes to exchange and coordination, therefore, the lack of such sanctions makes talk good for nothing, so to speak.

Coverage and Direct Requests

To relate these two perspectives to our research question about whether coverage follows firms' direct requests for it, we argue that even relatively inexpensive publicity—what might be considered

cheap talk—has costs, and these costs can be established by the social conventions that organizational scholars refer to as “institutions” (DiMaggio and Powell 1983) that inform what people view as appropriate (March and Olsen 1989). This argument echoes the Farrell and Rabin (1996: 116) argument that “a rigid ‘social convention’ may do better for the players than does cheap talk” when neither player clearly controls the communication.

While prior studies of media coverage suggest this is the case with market stories offered by journalists, the possibility of producer voice (source influence) in media coverage remains unexplained (Rosa et al. 1999). Toward that end, we turn to the idea that the institutions of journalism establish a flexible social exchange system that governs source-reporter interactions by offering incentives for exchange and sanctions for violating the rules.

Social Exchange

To understand the governance mechanism that puts value—and cost—into talk that might otherwise be viewed as so cheap as to be worthless, we turn to social exchange theory (Homans 1958). Social exchange theory views social behavior as a process of negotiated exchange among actors within a given system of exchange. Actors in such systems are governed by a set of rules, both implicit and explicit (Ekeh 1974). Drawing on institutional theory (see DiMaggio and Powell 1983; Powell 1991), we understand exchange systems as products of institutions defined as the rules, practices, values, beliefs, and assumptions that shape both how people think about things and what they do (Friedland and Alford 1991; Thornton and Ocasio 1999). As an example, the journalistic codes of conduct described above represent institutions.

While the value of a positive reputation creates incentives for firms to offer potential news stories to reporters in the hopes of receiving favorable coverage, reporters and firms come to this potential quasi-exchange from different institutional worlds, each with their own logics for determining what is appropriate (March and Olsen 1989, 2004). Firms are judged by market outcomes: product reviews, unit price, total sales, and profit. Reporters, by contrast, are judged by their dedication to issues and adherence

to norms of independence, integrity, and objectivity. Although audience size is clearly an important dimension of a reporter's reputation, prestige and audience tend to follow high-profile prizes for quality reporting that are judged by journalists, not their customers. Boltanski and Thévenot (1991) refer to the latter institutional environment as the world of the inspired and the former as the world of the market.

When actors encounter situations at the intersection of different institutional worlds, they face the challenges and opportunities presented by ambiguities borne of competing institutional pressures (Kraatz and Block 2008). In the market for news coverage, firms stand to gain from *using* reporters to broadcast and legitimate their stories, but the journalism profession imposes a code that protects reporters from being used by forbidding them to enter into any kind of bargain with sources. Obviously, there is a clash here that creates ambiguities about how to manage the interaction. Practically, reporters routinely bend—but rarely break—the rules of their profession to gain access that makes their jobs feasible or their stories more compelling. In the language of social exchange theory, this sort of dealing is part generalized exchange, part restricted social exchange (see Ekeh 1974), where the latter is a direct non-monetary *quid pro quo* and the former is a much more indirect exchange in which “favors” are expected to generate returns, but not in a way that permits easy or precise calculation of the balance of trade, so to speak.

This flexible social exchange system allows firms to benefit from soliciting coverage through voluntary contributions to reporters, but only up to a point. As long as reporters regard the information they receive from firms as honest and credible, using it to develop stories makes their lives easier without compromising their independence. In that case, reporters that use the source's contribution in a story are effectively reciprocating by performing a service to the public that also provides a benefit to the source, even if indirectly. In work that extends signaling theory from labor markets to advertising (see Grossman and Shapiro, 1984), however, the marginal value of repeated messages diminishes markedly. Similarly, we expect contributions from sources to reporters to eventually diminish drastically for two reasons: the logic of the journalist's role and the content of the information. For journalists, doing too many stories about a source risks the appearance of abandoning independence and being used as a tool. Conversely, firms that bombard journalists with information are likely to be seen as mere bullshitters (Frankfurt

2005). Needless to say, earning such a reputation with reporters would seriously undermine the goal of using the press to signal quality to the public.

Moreover, repeatedly calling for media attention when there is no real news to report amounts to crying wolf, a social misstep that comes with sanctions that create an inverted U-shaped relationship between media coverage and calls for media attention. On the one hand, reporters sanction firms that cry wolf by calling for media attention too often by all but ignoring subsequent calls for attention. On the other hand, the sanctions for crying wolf mean that firms that want to be taken seriously can only call for attention so often, and this puts a degree of cost—actually opportunity cost—into each call for media attention. Below a certain threshold, therefore, calls for media attention enable them to function like signals. Beyond that threshold, they are likely to be viewed as nothing more than cheap talk. This leads to a hypothesis regarding the effects of firms' direct efforts to solicit media coverage:

H1: Press release frequency is positively related to media coverage at low to moderate levels, but negatively related to coverage at higher levels.

Coverage and Mediated Solicitation

Although information revealed by the source to the recipient in information economics games like those in Spence (1973), Grossman and Shapiro (1984), and Farrell and Rabin (1996) are rarely mediated, reporter-source interactions are frequently brokered by agents hired to mediate the source's relationship with reporters, and vice versa. Eager to avail themselves of reporter attention but wary of the sanctions of crying wolf, firms that lack expertise in dealing with the media sometimes seek the expert counsel of public relations (PR) agents, intermediaries who represent their clients to reporters to help them, as sources, to maximize the benefit and minimize the risk of calling for media coverage. By meeting this need, PR agents have become fixtures in the media world, (Jackall and Hirota 2000). The Council of Public Relations Firms estimates current worldwide PR revenues at over \$7 billion US dollars.

PR agents are judged by their ability to secure favorable media coverage for their clients and, ultimately, to support outcomes facilitated by news coverage. The PR agent's ability to create value for clients depends on thinking like a reporter, so there are strong ties between PR and the world of journalism. Many PR agents even come from journalistic backgrounds, and vice versa. Beyond shared background, PR agents build their business on long-term relationships cultivated with news agencies.

Their background, experience, and relationships enable PR agents to serve their clients in managing the social exchange between firms and journalists in two ways: first, by helping them develop stories that fit journalistic norms; and second, by helping them disguise concerted attempts to undermine reporter independence. Ironically, by bridging the gap between reporters and their sources at firms, PR agents help both parties distance themselves from exchanges that would undermine journalists' influence. In effect, PR agents help reporters hold to professional norms for independence while also helping sources get past the barriers those norms create.

Because using a PR agent adds to the cost of calling for media attention, it is a move that stands to enhance the signaling value of firms' publicity solicitations. As mentioned above, Spence's (1973) notion of a signal suggests credibility is positively related to cost. Costly signals are more likely to be reliable and revelatory, and thereby better at reducing uncertainty. Thus, all else equal, using a PR firm when calling for media attention should tend to add credibility to such calls and, therefore, increase the likelihood of attracting coverage.

Nonetheless, we expect the benefits of using PR agents to be subject to the same dynamic firms experience when soliciting media coverage for themselves. As with firms, reporters must also protect their independence against abuse by PR agents. This means pushing back on attempts to overuse them by ignoring stories. The same holds for the signal value inherent in conveying information through a PR agency. PR agents are not immune to the destruction of signal value that comes with presuming too much on journalists in the interests of their clients.

For these reasons, we expect firms' calls for media attention will have an inverted U-shaped relationship to coverage. However, because PR firms have developed specialized media skills and are

savvier when it comes to dealing with media outlets, we expect the effect to be less pronounced than that described in Hypothesis 1. That is, the inflection point is likely to occur at a higher level. This leads to our second hypothesis:

H2: The frequency of press releases is more positively related to media coverage when issued with PR assistance than without for low to moderate levels *and* less negatively related to coverage at higher levels.

DATA AND METHODS

Sample

To test our hypotheses, we study press releases and media coverage of manufacturers of computer workstation in the 1980s. The computer workstation is a category of computing machines that developed into a high-growth niche market in the 1980s. Situated between minicomputers and personal computers, this niche ushered in a wave of Schumpeterian (1934) creative destruction to the computer industry. Its growth effectively destroyed the value of larger minicomputer manufacturers like Digital Equipment and Data General while creating fortunes for startups like Sun Microsystems and Apollo Computer, among others.

History. Building on research done at SRI and Xerox PARC in the 1960s and 1970s, the first commercial workstations were introduced in 1980 (Bell 1986). Workstations packed features of that era's minicomputers into a dedicated machine that made it practical to locate in an individual's workspace for a single user whose technically demanding work could benefit from such power. Yet these products were neither personal computers nor minicomputers. Compared to contemporary PCs, they were far more powerful, but also considerably larger and much more expensive. Compared to minicomputers, they were smaller, cheaper, and less powerful. While most workstations could support multiple users, they were designed primarily to serve a single user; this was the opposite of minicomputers (Goldberg 1988).

Given this history, the computer workstation market holds several advantages for our purpose. First, the market developed during the 1980s, a period of intense media interest in high technology, and this allows us to gather a comprehensive corpus of press releases and news stories. Second, because our analysis period begins before the shipment of the first workstations, it includes the period during which manufacturers had to educate users about the potential uses for, and benefits of, their products. Firms therefore competed vigorously to stake claim to unique product and market positions. Third, workstations developed a niche among the engineering and scientific community during this period. Due to the technologically-intensive nature of the product and its application, it was difficult for users and media participants to identify the precise workstation characteristics associated with quality, and consensus around so-called open systems architectures did not emerge until near the end of our analysis period (Garud 1993). Finally, there is a natural cut-off for this market's formative period—the period where media coverage should matter most (Kennedy 2008)—due to the blurring of the lines between high-end personal computers designed around the Intel 80486, a chip that allowed manufacturers of machines based on personal computer architectures to enter the workstation market with relatively little investment. Although the number of workstations producers had begun to decline in 1988, this development led to new entries that blurred the line between PCs and workstations (Sorenson 2000). Taken together, these characteristics provide the opportunity to study media coverage in an emerging market that has been well documented over time.

Period and Data. The primary data on computer workstation manufacturers were obtained from *Data Sources: A Guide to the Information Processing Industry*, a serial catalog of hardware, software, and networking products for computing environments. The data include information on market demographics and firm-level factors tracked by calendar quarter. From this source we identified 107 firms that introduced products positioned as workstations in North America in the period from 1980 to 1990.²

² Sorenson (2000) published analyses of the workstation market over the period 1980-1996. Therefore, the 175 vendors he identifies cannot be directly compared to the 107 identified for the period 1980-1990. Sorenson's data for 1980-1990 include 90 workstation entrants (personal correspondence, June 2002), exactly the number of firms for which we have basic data.

Demographics. Of these 107 entrants, size information could not be found for 17 firms. Though presumably all very small firms, this cuts our sample to 90.³ In our analyses, a further 3 firms were dropped due to only having one observation, and 10 additional firms were dropped due to all zero outcomes, i.e., they never received any media coverage. Thus, our analyses include 77 firms over 41 periods (there was no coverage for the first three quarters of 1980) for a total of 1,251 firm-period observations.

Corpus. We complement those data by analyzing the full text of more than 28,000 news stories and press releases that mention workstations—around 60,000 pages of material in all—from Lexis-Nexis. Textual analysis allowed us to concatenate press releases, public relations credits, and media coverage with the corresponding workstation manufacturers.

Measures

Media Coverage (Dependent Variable)

Our dependent variable captures the number of mentions a firm receives in media outlets. It is defined by calendar quarter as the number of stories in which the firm appears. Data about media coverage were extracted from a corpus of news stories collected from Lexis-Nexis. The corpus included 2,109 press releases from workstation producers and 18,890 news stories gathered from a collection of publications including national news magazines, daily newspapers, mainstream business publications, and specialized trade periodicals. This measure is consistent with those used in other studies (King 2008; Pollock and Rindova 2003).

³ In results not reported, we analyzed models including the full sample of 107 firms without controlling for firm size. The results were entirely consistent with those presented herein. As an alternative to firm size, we ran results on the full sample including a control variable for *de Novo* firms as a proxy for size. Again, the results were entirely consistent with those presented herein.

Press Releases

To measure firms' publicity-seeking efforts and voluntary contributions to news production, we counted the number of press releases issued by calendar quarter. Releases are a way of offering reporters information firms would like them to use in their stories—pre-packaged in a form designed to make that easy.

There are pros and cons to using releases as a proxy for the extent of firms' efforts to court media coverage. On the plus side, it provides a record of occasions when firms are out selling their stories to the media and the public. The issuance of press releases is a ubiquitous element of publicity campaigns that range widely in scope and complexity. At their simplest, publicity campaigns involve little more than a press release. Since more is generally needed to get the scarce attention of reporters' and their audiences, however, press releases are typically part of a more comprehensive program. Additional "media relations" tactics range from calling reporters and editors to meeting with them in-person to sending them press kits, demonstration products, or other promotional materials. Frequently, these activities are planned to coincide with publicity stunts or elaborate gatherings at trade shows, conventions, or other special events. On the negative side, therefore, using a simple count of releases misses the variance created by the additional activities that often accompanies a press release. While more aggressive publicity campaign designs appear to be correlated with heavier use of press releases, we do not have the data to characterize and analyze the richness of publicity campaign activity. If that data were available, it would allow better explanations of variance; however, without it, results understate the significance of firms' publicity efforts. This makes any finding using our noisy measure a conservative estimate of the underlying phenomenon, and press releases therefore remain a valuable proxy for broader underlying publicity campaigns.

Public Relations Credits

Since a press release is a solicitation for coverage written as a story containing information that will generally be incorporated into another story, one of its key features is contact information reporters can use to get to someone charged with giving quick answers to their questions. Especially for stories written

on tight daily deadlines, firms that want to make it easy for reporters to write about them must have an easy-to-follow procedure for providing same-day answers to reporter questions—preferably with turn times measured in minutes rather than hours or day parts. Consequently, firms will often use a public relations firm to ensure they are able to respond promptly to reporter inquiries; and when they do, the contact information indicates the name of the PR firm engaged to help. Since each release can be coded for whether it is supported by a PR firm, it is possible to use this to develop firm-period measures of PR usage. Thus, contact information makes it possible to credit PR firms for their assistance. We count the credits attached to each press release and use them as a proxy for PR usage.

As with releases, there are pros and cons to using contact credits as a measure of PR usage. First, public relations firms are sometimes hired to do media relations when they may have had little to do with the overall campaign design. Though this is generally not desirable for PR firms since media relations work is not a highly leveraged activity for a firm's most senior professionals, it does happen on occasion. Second, there are times when a PR firm will be engaged for publicity campaign planning but not for the media relations task that leads to credits on releases. Thus, using credits to PR firms as a proxy for PR usage may mix cases that understate usage with others where usage may have entailed little real counsel. With these limitations in mind, we use credits to PR firms because it is the best proxy we have for the extent to which firms are turning to the brokerage capability and inside knowledge of skilled PR agents.

Control Variables

We control for several other variables that have the potential to influence media coverage. First, we control for firm size, as larger firms are likely to receive greater media attention than smaller firms. Firm size is measured as the natural log of each firm's full-time employee population, in thousands. Second, we include a measure of firm experience, measured as the number of quarters of experience the firm has in the workstation market. We include this measure as a control under the supposition that more experienced firms may not only be higher quality firms, but also have a better understanding of how to interact with the media. Finally, we include a control for firm age (in years) at the time of market entry.

This measure captures the firm's entire history, whether in the workstation market or in markets other than the workstation market. Size, age, and experience measures were obtained from *DataSources* and *Lexis-Nexis*. *DataSources* updates were no more frequent than annual, so annual figures are generally used for all quarters in a calendar year. Linear interpolation was used to fill in missing values.

Statistical Method

Our dependent variable is a count measure that can only take non-negative integer values. Moreover, many of the observations are bunched close to zero. Scholars suggest a Poisson regression model to deal with dependent count variables of this sort (Greene, 2003; Kennedy, 1998; Maddala, 1993). The Poisson regression, however, is quite sensitive to its distributional assumptions. Should the mean and variance for the observed sample not equal lambda, the likelihood function would be misspecified leading standard errors to be underestimated and generating erroneous results. We found evidence of overdispersion in our data; therefore, we turn to a negative binomial model (Cameron and Trivedi, 1986). Equation (1) formally expresses our initial specification:

$$\lambda_{it} = \exp(\beta_1 x_{it} + \beta_2 W_{it} + \varepsilon_{it}) \quad (1),$$

where λ_{it} represents the expected number of media mentions for firm i in calendar quarter t , x_{it} captures the press release/public relations variable of interest for firm i in calendar quarter t , W_{it} is a vector of control variables, and ε_{it} is the individual unobserved error term. In the negative binomial model, ε_{it} is assumed to have a standard gamma distribution (Cameron and Trivedi, 1986). The betas (β) are parameter estimates.

In this study we are explicitly interested in examining the shape of the relationship between press releases and media coverage, and public relations usage and media coverage. To test for the hypothesized curvilinear impact of press releases and PR usage, we examine models including quadratics. We therefore square the independent variables of interest in equation (1). Expressed formally:

$$\lambda_{it} = \exp(\beta_1 x_{it} + \beta_2 x_{it}^2 + \beta_3 W_{it} + \varepsilon_{it}) \quad (2).$$

Given the panel structure of our data with quarterly firm observations, the possibility arises that the errors (ε_{it}) will not be independent across time (Greene, 2000). For example, given that the workstation industry represents a fast-growing industry during the period of study (1980-1990), both press releases and coverage are increasing over time, as are many of our independent variables. We therefore control for the possibility of a systematic time component driving the observed relationships by including fixed time dummies into the specification.

Conceptually, we decompose ε_{it} into a vector of systematic (fixed) time effects, which we label Z_t , where Z_t represents quarterly dummy variables, and an error term η_{it} . Equation (3) represents this decomposition of ε_{it} .

$$\eta_{it} = \exp(\beta_1 x_{it} + \beta_2 x_{it}^2 + \beta_3 W_{it} + Z_t + \eta_{it}) \quad (3).$$

Although fixed time effects go a long way in addressing serial correlation over time, the possibility still exists that η_{it} in equation (3) will not be independent across same-firm observations (Greene, 2000). Hausman, Hall, and Griliches (1984) introduce a fixed-effect negative binomial model to control for serial correlation of this sort; however, there has been considerable debate within the econometric literature about whether this method effectively controls for individual effects (see Allison and Waterman, 2002).

We therefore turn to a dynamic longitudinal model to deal with within-firm serial correlation. We incorporate a linear integer autoregressive process (INAR) that includes lagged values of the dependent variable as regressors (see Osh and Alzaid, 1987; Alzaid and Osh, 1990; Brännäs and Hellström, 2001). Specifically, we include a one-period lag of the dependent variable, an INAR(1) process, to our specification as an alternative to the traditional fixed effects approach.

The INAR dynamic method has been proposed as an effective control for firm-specific unobserved effects (Alzaid and Osh, 1990; Greene, 2003; Salomon and Jin, 2010), and it has several benefits for our purpose. First, it effectively reduces the potential for within-firm serial correlation of the errors by controlling for momentum in media coverage. Second, it allows for the identification of a dynamic firm-

specific component, rather than the static nature of most fixed effects. Equation (4) formally presents the INAR(1) dynamic specification:

$$\square_{it} = \exp(\square_1 x_{it} + \square_2 x_{it}^2 + \square_3 W_{it} + Z_t + y_{it-1} + e_{it}) \quad (4),$$

where y_{it-1} represents a one-year lag of the observed dependent variable.

Any stable, unobserved firm-specific effects on media coverage that are not included in x or accounted for by the INAR dynamic effect will continue to be captured in the error term (e_{it}). For example, firm-specific factors such as R&D expenditures, marketing outlays, and product quality are relatively stable over time, not directly measured here, and likely to have a lasting impact on media coverage. Because we are unable to identify and measure the described effects, there exists the potential for firm-specific unobserved heterogeneity of this sort to be biasing the results. We therefore include random firm effects into our empirical specification (Kennedy, 1998). Equation (5) presents our decomposition of the systematic, firm-specific effect embedded in the error term (e_{it}) of equation (4), where R_i represents the individual firm-specific disturbance. After we extract R_i from e_{it} , we can more confidently assume that u_{it} is i.i.d. with zero mean.

$$\square_{it} = \exp(\square_1 x_{it} + \square_2 x_{it}^2 + \square_3 W_{it} + Z_t + y_{it-1} + R_i + u_{it}) \quad (5),$$

In summary, we present results including time fixed effects, AR(1) dynamics, and random firm effects. The advantage is that this econometric approach helps control for characteristics not directly measured by our other independent variables, but that might correlate with media coverage. Moreover, it controls for serial correlation and unobserved heterogeneity without having to precisely specify the source. It therefore provides robust estimates that eliminate statistical bias. The disadvantage, however, is that we cannot precisely identify each and every individual factor that influences the dependent variable. Because our goal is to control for, rather than investigate, these effects, we accept this tradeoff.

RESULTS

Table 1 presents descriptive statistics and product moment correlations. Not surprisingly, the correlations indicate that larger, older, and more experienced firms issue more press releases. Similarly, larger, older, and more experienced firms receive greater media coverage. We acknowledge that the substantial correlations among some of the independent variables might raise multicollinearity concerns; however no independent variable had a variance inflation contribution greater than 10, which is the generally accepted range for individual variables (Kennedy, 1998), and no model exceeded the conventional threshold of 30 (Belsley et al., 1980). Thus, we conclude that multicollinearity does not adversely impact the reported findings.

*****Insert Table 1 about here*****

Turning our attention to the variables of interest, we find that the number of press releases issued per quarter is positively correlated with a firm's quarterly media coverage. The number of releases issued by a PR agency on behalf its client firm is likewise positively correlated with media coverage, but the correlation is much smaller in statistical magnitude than releases issued by the focal firm directly. These findings hint at some fundamental differences between publicity campaigns managed by the focal firm versus those that are managed by agencies. Specifically, the correlations suggest either that firms are much less discerning than public relations firms in their attempts to influence media coverage, or alternatively, that firms achieve better media coverage results on their own. Although the results presented below better inform our inference, both sets of correlations suggest that efforts to attract media attention (whether initiated by the firm or the PR agency) seem to payoff in coverage.

More generally, although the correlations between the independent variables and media coverage are large in statistical magnitude, we exercise caution in interpreting their effects. This is because it remains unclear whether the effects are economically meaningful. Moreover, the pairwise correlations do

not control for intervening factors that we include in the multivariate analysis. Therefore, to better understand the nature of the underlying relationships, we turn to the multivariate regression analysis.

**** Insert Table 2 about here ****

Multivariate regression results appear in table 2. Although not presented, period dummies were significant for most periods ($p < .05$) and all later ones, indicating increasing media coverage of the workstation market during the period of study. The firm effects were likewise significant as a set ($p < .05$) suggesting that there are systematic differences among firms in their media coverage.

Column 1 presents a base model of control variables. Not surprisingly, there is momentum in media coverage such that firms that received coverage in past quarters are more likely to receive coverage in future quarters. However, the effect is surprisingly smaller than one might expect. The marginal effects of the lagged coverage variable (presented in brackets) indicate that 1 media article mentioning the focal firm in the prior quarter translates only into about 1/100th of an article in the current quarter.

Although firm size, age, and experience were all positively correlated with media coverage in table 1, only firm size remains positively associated with media coverage after accounting for firm and time effects. The effects of age and experience turn negative. This suggests that the positive correlations between firm age and coverage, and between firm experience and coverage, were driven by firm size and/or other stable firm (or time) related factors. Conditional on firm size, older and more experienced firms are less likely to garner media attention.

In column 2 we introduce the main effect of total press releases (whether issued by the focal firm or a public relations agency, on behalf of the focal firm). We find that press releases are positively related to coverage. The findings indicate that on average, media coverage increases by about 1/6th of an article for every additional press release.

Column 3 addresses the shape of the relationship—whether linear or curvilinear—by adding a quadratic term. Consistent with hypothesis 1, we find that there are decreasing returns to issuing press releases. Based on the marginal effects presented in table 2, the inflection point is at around 23 press

releases. That is, once a firm issues more than 23 press releases in a given quarter, the media begin to ignore its overtures.

In order to test hypothesis 2, we separate out the public relations agency-issued press releases in column 3 from the total number of press releases issued by the focal firm. Our hypothesis suggested that press releases issued by public relations agencies would likewise take an inverted-U shape because the same norms of exchange governing the source-reporter exchange apply to public relations agencies. However, given their industry expertise, we expected the effects to be more subdued than for firms issuing their own releases. Although we find effects consistent with hypothesis 2—i.e., the results indicate that firms retaining PR agencies benefit from the expertise of their agents—the results in columns 4 and 5 indicate that, in contrast with firms, public relations agents know the limits to which they can push the source-reporter exchange without violating norms of reciprocity. Moreover, the results in columns 4 and 5 suggest that public relations agencies are better than firms at parlaying press releases into media coverage. In contrast with total press releases, the number of media stories mentioning the focal client firm increases by about $1/4^{\text{th}}$ of an article for each additional press release issued by a public relations agency. Moreover, although directionally consistent, the quadratic effect on public relations agency-issued press releases does not statistically differ from zero in column 5. Public relations agencies know how to derive the greatest signal value from press releases and effectively avoid crying wolf.

In column 6 we rerun the results from column 3 including only press releases that have been issued directly by the focal firm (without with the help of a public relations agency). The results are consistent with those presented in column 3. In fact, a direct comparison of the benefits of firm-issued press releases versus PR agency-issued press releases can be gleaned by examining the impact across columns 5 and 6. Figure 1 presents this comparison graphically. We plot the results from column 6 for firm-issued press releases and column 5 for PR agency-issued press releases. Not only are PR agency-issued press releases not subject to the same diminishing marginal returns, but they are also better at converting press releases into coverage than the firm issuing press releases on its own—either because they better craft press releases or because they maintain better relationships with media outlets.

***** Insert Figure 1 about here *****

Finally, in column 7 of table 2 we assess the robustness of the findings to the inclusion of both firm-issued press releases and PR agency-issued press releases. The results are entirely consistent with those presented in prior columns. As such, our inferences do not change.

DISCUSSION

As a complement to research that links media coverage to both corporate reputation and performance (see esp. Deephouse 2000a; Fombrun and Shanley 1990; Pollock and Rindova 2003; Pollock et al. 2008; Rindova et al. 2005), this research relates media coverage to strategic contributions to upstream information flows that support media coverage. Defining publicity broadly as efforts that social actors undertake to solicit coverage of potential news stories they would like to see in editorially controlled media outlets, we explore a question of considerable theoretical and social significance: to what extent is the coverage of supposedly independent journalists affected by the publicity efforts of corporations that stand to gain from it?

To address this question, we use a corpus of 1980s press releases and news stories to test the hypothesis that publicity has an inverted U-shaped effect on media coverage, where coverage is measured quarterly as the number of stories in which a firm is mentioned and a firm's publicity efforts are measured quarterly as the number of press releases it issued. Controlling for a firm's prior period coverage, age at entry, experience in the market, size, and other stable firm and time factors, we find that a low to moderate level of publicity has a positive effect on coverage, but higher levels of publicity have a negative effect on coverage. Furthermore, we find that firms get more for their publicity efforts when they use public relations (PR) experts to assist in their calls for reporter attention. Also, as Figure 1 shows, firms that engage PR firms do not to see negative returns to publicity, on average, partly because working with PR firms appears to force them to call for reporter attention less often.

Contributions to Theory

Our study offers two main contributions to theory. First, it leverages the complementary foci of economics and sociology to highlight the cost of crying wolf and its role in allowing inexpensive publicity efforts—cheap talk, if you will—to serve as signals that attract media coverage. Second, our use of social exchange revives that theory for its usefulness in integrating complementary ideas from economics and sociology.

Signaling and the Cost of Crying Wolf

Following economic theory's focus on efficiency and rationality as key explanatory factors, the existence of publicity suggests it somehow affects media coverage, but not the theoretical mechanism behind its effect. One might use signaling theory (Spence 1973, 1974, 2002) to explain publicity's effect on coverage as the result of a firm's ability to signal that it has a potential news story worth covering, but signaling theory argues that a signal's power depends on whether it conveys evidence of credible commitment to indicated outcomes. Since such evidence typically comes only with costly investment, however, saying publicity is a signal could appear to be a dubious stretching of signaling theory. Because of the non-monetary cost of crying wolf incurred when publicity is over-used, however, even low cost publicity tactics like press releases can have a signal-like effect on media coverage. The monetary investment in a signal is not the only consideration relevant to determining whether it is credible: credibility and reputation matter, too.

Consistent with organizational sociology's focus on legitimacy and appropriateness as explanatory factors (DiMaggio and Powell 1983; Meyer and Rowan 1977; Powell and DiMaggio 1991), the existence of public relations as a field suggests there are legitimate—and presumably efficacious—ways of soliciting media coverage, but it does not explain why reporters would risk compromising their independence by covering corporations with stories to sell, so to speak. Strictly speaking, finding a statistically significant relationship between publicity and coverage implies that soliciting coverage tends

to buy firms some consideration from reporters. Put more bluntly, such a finding suggests firms are able to trade information for coverage.⁴

Combining these two perspectives provides the rationale for the competing effects of publicity we hypothesize and observe in this research. When it comes to explaining social behavior, the “no free lunch” perspective of economics (most clear in Friedman 1975) argues that publicity seekers must see payouts to participating in the information exchange reporters rely on to develop news stories, but this perspective implies diminishing returns to higher levels of publicity effort, not negative ones. When it comes to the explaining the consequences of violating social norms, applying the “no free pass” perspective of organizational sociology (see especially DiMaggio and Powell 1983; Zuckerman 1999) to publicity seekers predicts negative consequences for firms whose frequent calls for reporter attention amount to disregard for reporter independence enshrined in journalistic codes of reporter conduct. While this explains negative returns to firms’ over-use of publicity, it says little about why reporters would risk their independence in the first place by giving any detectable consideration to publicity-seeking firms.

This could be explained as decoupling, the situation where firms separate technical aspects of work from more ritualistic activities performed to project legitimacy (Meyer and Rowan 1977). In the context of markets, this can be seen in investor reactions to corporate announcements of practices widely seen as value enhancing (Westphal and Zajac 1994, 2001; Zajac and Westphal 1998; 2004). Thus, reporters may be able to give limited consideration to publicity-seeking firms that volunteer potential news stories, but the need to preserve their independence ought to limit the extent of such consideration. Similarly, firms that make a show of respecting the rules of the journalism profession may expect some consideration for doing the work to package their potential news stories so that reporters will find them easier to cover, but reporters appear to penalize excessive publicity by withholding coverage they might otherwise be prepared to give. We refer to this penalty as the cost of crying wolf. In our view, the cost of crying wolf

⁴ While we did not hypothesize a reciprocal trade in which coverage makes firms more likely volunteer their stories to the media, we find in a post-hoc analysis that publicity activity is positively related to prior coverage. Rather than interpreting this as evidence that reporters trade coverage for subsequent access, we view this as suggesting firms that find themselves in the media are more likely to learn and play the publicity game—that is, to volunteer potential news stories in the hopes they will receive consideration from reporters deciding what to cover.

provides an intuitively appealing explanation for both the signal-like effects of publicity and negative returns to its overuse.

While decoupling explains how firms avoid full compliance with onerous obligations when they can get away with it, it is the economic logic of incentives and efficiency that explains why reporters might want to get away with such non-compliance. Thus, combining the “no free lunch” and “no free pass” logics of economics and sociology offers an explanation of publicity’s competing effects on media coverage that, in our view, is appealing for its clarity and simplicity. We believe this argument offers a blueprint for fruitful integration of economic and sociological theory. In our view, interdisciplinary theoretical integration makes sense when combining theories from each discipline leads to different predictions than either would make on its own, and empirical analyses common to both disciplines provides support for those predictions.

Limitations and Future Research

The importance of publicity is likely to vary from market to market based on the pace of change, price, and the durability of goods. Thus, publicity is probably more important to buyers of high-technology products, so studying the market for computer workstations amounts to looking for this effect where it is likely to appear. While we expect the effects of publicity-seeking efforts to be weaker in non-technology contexts such as branded consumer products, markets for relatively inexpensive goods, or industrial markets with very long-lived products, they may well be important in non-technology markets for experience goods. The growth of rating services for hotel stays, restaurant meals, film and live entertainment options suggests future research is needed to understand both when critics or analysts are likely to be influential in mediating markets and what makes their opinions more or less susceptible to consideration given to subjects who come to them seeking coverage.

Obviously, the media landscape has change dramatically since the 1980s. Rather than attempting to sort out an ecosystem that is still very much in flux, our aim in this project has been to isolate considerations that are more timeless, and our pre-Internet media corpus serves this research by exploring

social exchange dynamics during a period in which publicity activity was simpler and more traceable than it is today. That said, the rise of the Internet and mobile communications has brought a proliferation of alternative media and related tactics for attracting coverage. From newspapers that have gone online to quasi-journalistic blogs to barely disguised paid promoters that masquerade as critics to new technologies that are increasingly blending text, still images, animation and video, the media landscape is far more complicated today, and this has brought substantial change to the profession of public relations as well. Understanding when today's publicity-seekers will pay the cost of crying wolf will require research that explores the broader range of tactics firms now use to solicit media coverage. Besides the still ubiquitous press release and distribution channels still called "wire services", this means considering communications that are neither archived nor, in some cases, publicly available: email, mobile phone texts, and tweets to twitter accounts.

While our findings show a publicity-to-coverage relationship based on quantities of press releases and articles that mention firms, future research should explore how more qualitative dimensions of publicity affect similar aspects of coverage. For example, are there topics that tend to get coverage regardless of how much publicity a firm has done recently? Reporters may be able to pass on stories about financial results or management changes, but they may be less likely to pass on product news, acquisition rumors, or news audiences might see as scandalous. Also, does increasing publicity affect the tone of coverage even before it leads to negative returns?

More broadly, our study's implications suggest three additional topics deserving of further study: the endogeneity of coverage, economists' and sociologists' shared interest in institutions (albeit of different types), and game-theoretic treatment of source-reporter interactions.

The Endogeneity of "Coverage", Broadly Conceived

In both economics and sociology, research designs frequently feature data derived from the "coverage" of firms provided by various types of critics, analysts and third-party evaluators, and these data are usually treated as exogenous to firms' political or social influence over the relevant

commentators. Historically, this endogeneity is either dismissed either by assuming an efficient market will ferret out or apply appropriate discounts when this is hard to do.

Our study reveals a complex endogeneity to media coverage that deserves further attention. Specifically, finding that publicity affects media coverage suggests the need to re-think data usually seen as being *about* firms, not as coming *from* them. This is necessary for firm “coverage” in the broadest possible sense of the word—not just media coverage, but also the coverage provided by financial analysts, technology analysts, influential bloggers, and the like. Handling the endogeneity of coverage will require new theoretical and empirical advances, especially for scholars seeking to make use of the rapidly expanding but heretofore largely untapped web-based sources of firm coverage.

Shared Interest in Institutions

Although we draw on economists’ and sociologists’ shared interests in institutions, much more can be done to develop the ways in which each tradition could enrich the other. In institutional economics (see Coase 1937; North 1977, 1981, 1990, 2005; Veblen [1899] 1981; Williamson 1994; Williamson 1971, 1973, 1975), scholars relate firm boundaries, market structure, and social stratification to institutions, where institution is generally defined as the formal or legal rules that permit the contractual relationships necessary for building firms and markets. In contrast, organizational sociology’s new institutional theory (DiMaggio and Powell 1983; Powell and DiMaggio 1991; Scott 2001) takes a broader view of institutions by including not only formal and legal rules, but also widely shared cognitive frameworks that support coordination even as they put constraints on departures from established norms. While economists emphasize the legal code that makes contracts enforceable and thereby permits a cost-benefit analysis of writing and enforcing contracts to govern transactions, sociologists tend to emphasize the role of custom and habit in the same things.

Institutions based on codes of conduct offer a promising meeting ground for this project. The institutions of journalism are informal in the sense that they are backed not by legislation, but by explicitly documented codes of conduct that specify rules along with the consequences of breaking them.

When these consequences lead to disputes that land in court, outcomes give more formal standing to these codes by establishing legal precedent that, in turn, adds to common law. Thus, the institution of journalism shares features of the formal and informal institutions of interest to economists and sociologists, respectively. We hope future research will pursue the insights to be gained from understanding the similarities and differences between the two.

Reporter-Source Exchange as a Publicity Game

While we have conceptualized the information flows that drive media coverage as a social exchange system, future research could further explore this exchange by formalizing the strategic considerations that drive it. In our view, the game theory toolkit is well suited to exploring the situations in which firms are most likely to volunteer potential news stories to reporters, and when reporters are likely to reciprocate in some way, especially with coverage. In particular, formalizing the publicity game could shed light on the conditions that lead reporters to respond to publicity by either giving fair coverage or withholding coverage even it would be fair. Conversely, a publicity game could explain when firms are likely to avoid the press versus calling for media attention, either with transparency or the sort of selective disclosure that could be viewed as misleading. In contrast to our focus on how coverage is affected by the extent of firms' publicity efforts, formal modeling offers an economical method for exploring more qualitative aspects of source-reporter exchange—things such as how the honesty of disclosure affects the fairness of coverage, and vice versa.

Implications for Managers

The cost of crying wolf should apply to contemporary publicity seekers, but today's rapidly evolving ecosystem for market news and analysis is changing how this cost is counted. While the increasing use of email has made bare bones publicity work cheaper than ever before, the resulting flood of email also makes it less likely to attract a reporter's attention. While one might argue that reporters can easily and cheaply disregard frequent email requests for their attention, our results suggest spamming

reporters could actually have negative effects on a publicity seeker's reputation and likelihood of getting covered. Given our finding that 1980s public relations firms generally helped clients get better returns for their publicity efforts, we expect contemporary PR firms are similarly able to help firms find the delicate balance between, on the one hand, failing to volunteer their potential news stories to reporters that are always looking for news and, on the other, approaching reporters so frequently that they are seen as crying wolf and, thus, discounted, ignored or otherwise punished for their lack of media savvy.

As online distribution channels gain larger audiences for news stories, media organizations that grew up in print and broadcast journalism are looking for ways to compete, and all kinds reporters—journalists, bloggers, and everything in between—are facing a flood of inbound email requesting their attention. To cope, high status reporters are increasingly conducting outbound searches for good stories, and low status reporters are searching the web for stories to aggregate. As reporters increasingly look to social networks and related social media sites for trends and stories, they are ironically pioneering avenues of direct strategic communications for publicity seekers, not just identifying new strategies for attracting reporter attention. While this might appear to be bad for conventional journalism, we believe the continuing evolution of the media landscape will affirm the enduring value of conventional journalism's emphasis on reporter independence from sources, even if supported by new types of organizations and institutions.

In conclusion, this study extends prior research that links media coverage to firm performance by relating supporting information flows to social exchange system governed by norms of journalism that demand reporter independence. This finding explains how the cost of crying wolf allows otherwise cheap talk to function as a signal that attracts media coverage that can help firms position themselves with their audiences.

TABLES AND FIGURES

Table 1: Descriptive Statistics

Variable	Obs.	Mean	S.D.	Min	Max	1	2	3	4	5	6
1. Coverage	1064	21.9	63.94	0	590						
2. Releases (All)	1064	1.8	3.68	0	32	.59					
3. Releases without PR	1064	1.6	3.48	0	32	.61	.98				
4. Releases with PR	1064	0.2	0.72	0	9	.07	.36	.16			
5. Size (<i>ln</i> Sales, \$B)	1064	5.5	2.27	0	11.0	.44	.36	.37	.03		
6. Age at Entry (years)	1064	20.0	23.51	0.1	98.1	.27	.16	.19	-.08	.67	
7. Experience	1064	12.2	8.42	0	37	.10	.27	.26	.12	.18	.08

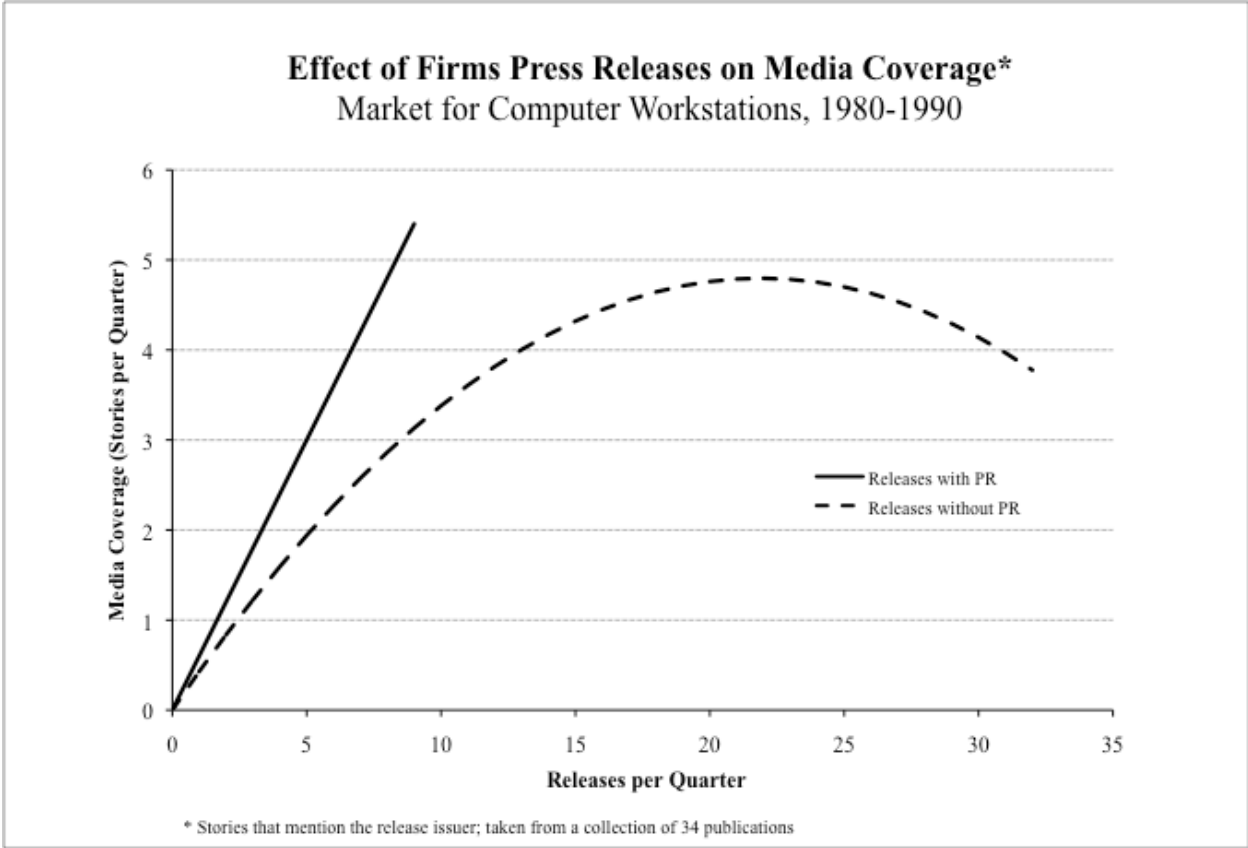
Table 2: Cross-sectional Time Series Negative Binomial Regression of Firm Media Coverage†
Market for Computer Workstations, 1980-1990

<i>Factors</i>	Controls (1)	Hypothesis 1 (2) (3)		Hypothesis 2 (4) (5) (6)			(7)
Releases		0.024*** (0.005) [0.171]	0.062*** (0.010) [0.415]				
Releases ²			-0.001*** (0.000) [-0.009]				
Credits				0.039* (0.026) [0.281]	0.084** (0.050) [0.600]		0.072* (0.048) [0.482]
Credits ²					-0.011 (0.011) [-0.077]		-0.011 (0.010) [-0.074]
Rel. w/out PR						0.065*** (0.011) [0.438]	0.063*** (0.011) [0.427]
(Rel. w/out PR) ²						-0.001*** (0.000) [-0.010]	-0.001*** (0.000) [-0.010]
Coverage _{<i>t-1</i>}	0.002*** (0.000) [0.012]	0.001*** (0.000) [0.008]	0.001*** (0.000) [0.007]	0.002*** (0.000) [0.011]	0.002** (0.000) [0.011]	0.001*** (0.000) [0.007]	0.001*** (0.000) [0.007]
Size (<i>ln</i> Sales \$B)	0.298*** (0.034) [2.140]	0.294*** (0.034) [2.057]	0.300*** (0.033) [2.012]	0.300*** (0.034) [2.131]	0.297*** (0.034) [2.111]	0.295*** (0.033) [2.000]	0.293*** (0.033) [1.972]
Age at entry (yrs.)	-0.013*** (0.003) [-0.094]	-0.013*** (0.003) [-0.092]	-0.015*** (0.003) [-0.098]	-0.012*** (0.003) [-0.088]	-0.012*** (0.003) [-0.086]	-0.015*** (0.003) [-0.103]	-0.014*** (0.003) [-0.097]
Experience	-0.019** (0.009) [-0.136]	-0.019** (0.009) [-0.131]	-0.021** (0.009) [-0.140]	-0.019** (0.009) [-0.134]	-0.019** (0.009) [-0.137]	-0.021** (0.010) [-0.141]	-0.021** (0.010) [-0.144]
Constant	-1.531*** (0.450)	-1.351*** (0.418)	-1.371*** (0.418)	-1.550*** (0.449)	-1.416*** (0.416)	-1.377*** (0.451)	-1.381*** (0.450)
Year Effects	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
Firm Effects	Random	Random	Random	Random	Random	Random	Random
Observations	1251	1251	1251	1251	1251	1251	1251
Δ in LR Chi ²		24.91***	16.21***	2.17*	1.13	40.12***	2.28

Significance levels: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$; Standard errors in (parentheses); marginal effects in [brackets].

†1,251 firm-period observations from 77 firms over 41 calendar quarters; media coverage is measured as the quarterly count of articles that mention each firm.

Figure 1: Publicity's Competing Effects on Media Coverage



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