SECURITIES ANALYSTS AS FRAME-MAKERS[**]

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Abstract

In this paper we explore the mechanisms that allow securities analysts to value companies in contexts of Knightian uncertainty, that is, in the face of information that is unclear, subject to unforeseeable contingencies or to multiple interpretations. We address this question with a grounded-theory analysis of the reports written on Amazon.com by securities analyst Henry Blodget and rival analysts during the years 1998-2000. Our core finding is that analysts' reports are structured by internally consistent associations that include categorizations, key metrics and analogies. We refer to these representations as calculative frames, and propose that analysts function as frame-makers – that is, as specialized intermediaries that help investors value uncertain stocks. We conclude by considering the implications of frame-making for the rise of new industry categories, analysts' accuracy, and the regulatory debate on analysts' independence.

Whether as brokers, critics or analysts, market intermediaries have become increasingly prominent in economic sociology. Intermediaries such as brokers were key to the notion of embeddedness and the rise of modern economic sociology (Granovetter, 1985; Burt, 1992). Nowadays, intermediaries are equally central to the discipline in its current expansion into disembedded mass markets (Callon, 1998; Stark, 2000; MacKenzie and Millo, 2003; Granovetter, 2004). Thus, for example, a promising literature on critics argues that in contexts of impersonal transactions, intermediaries replace the uncertainty-reducing role typically performed by embedded network ties (Hirsch, 1972, 1975; Benjamin and Podolny, 1999; Zuckerman, 1999, 2004). In a related development, as sociologists come to see the capital markets as the main locus of contemporary resource allocation (Flisgstein, 2001; Dobbin, 2004; Krippner 2005), financial intermediaries are increasingly considered essential to a sociological understanding of modern capitalism (Baker, 1984; Eccles and Crane, 1988; Davis, 1991: Podolny, 1993, 1994; Abolafia, 1996). Intermediaries, then, play a key role in the expansion of economic sociology from embedded to mass-market transactions as well as from bureaucratic to financial capitalism.

As Wall Street specialists in valuation, sell-side securities analysts constitute a particularly important class of market intermediary. Analysts produce the reports, recommendations and price targets that professional investors utilize to inform their buy and sell decisions. Understanding their work can provide crucial insight on how the capital markets value companies. Analysts value stocks by estimating their net present value, that is, by folding their future back into the present. In doing so, however, they confront Knightian uncertainty, namely, information that is unclear, subject to unforeseeable contingencies or multiple interpretations (March, 1987; Knight, [1921]1971). This places analysts at the cusp of the future and the present, of calculation and judgment, uncertainty and risk.

While a vast academic literature has examined the analyst profession, existing studies have overlooked the significance that Knightian uncertainty poses for their work. The orthodox finance literature, for instance, assumes that Knightian uncertainty is inexistent, presenting analysts instead as forecasters in a probabilistic world of risk (Cowles 1933, Lin and McNichols 1998, Lim 2001). Similarly, the literatures in neo-institutional sociology and behavioral finance argue that analysts overcome

uncertainty by foregoing calculation altogether, resorting instead to imitating the opinions of their colleagues (see respectively Philips and Zuckerman 2001; Rao, Greve and Davis 2001; and Scharfstein and Stein 1990, Hong, Kubik and Solomon 2000). By presenting calculation under uncertainty as either straightforward or impossible, neither of these treatments captures the challenge that securities analysts confront: a world of "neither entire ignorance nor complete and perfect information, but partial knowledge," as Knight wrote in describing entrepreneurship (Knight, [1921] 1971, p. 199).

Only recently has the analyst literature begun to focus on Knightian uncertainty, presenting these intermediaries as a class of market critic s (cf. Zuckerman, 1999, 2004; Zuckerman and Rao 2004). This sociological approach extends to analysts the general claim that critics reproduce the dominant social and cognitive order in which they operate (Hirsh, 1972, 1975; Rao, 1998; Benjamin and Podolny, 1999). For instance, Zuckerman (1999) argues that analysts reinforce existing industry categories by engaging in selective company coverage. However, the critics approach still leaves important questions unanswered: it does not clarify the nature of financial criticism that analysts perform, it does not account for the appearance of new industry categories such as the "Internet company," nor for the rise of unknown analysts to star positions in their profession.

The present paper extends and qualifies the critics literature on analysts by examining the calculative practices undertaken by these intermediaries. We ask, what is the meaning of analysis under Knightian uncertainty?

We address this question with a grounded-theory, qualitative content analysis of selected analyst reports. These public documents have the unique advantage of providing a window into the cognitive processes followed by analysts in real time, that is, unhindered by retrospective reconstruction. In developing our grounded theory methodology, we rely on the constant comparative method advocated by Glaser and Strauss (1967). We focus on a single well-known company, Amazon.com, and compare the reports written on it by the top Internet analyst at the time, Henry Blodget, with those of maximally different rival analysts. We center on the financially volatile period of the Internet "bubble" of 1998-2000 because it best captures the problem of analysis under extreme uncertainty.

Our findings point to an insight that has been underdeveloped in economic sociology. Underlying the assessments made by securities analysts, we find internally consistent associations between categorizations, analogies and key metrics. We label these as calculative frames. For example, one particular calculative frame for Amazon categorized the company as an Internet company, presented it as analogous to Dell Computers; and appraised its prospects in terms of revenue growth. Analysts who used this frame typically had a buy recommendation for the firm. A contrasting frame viewed Amazon as a book retailer, analogous to Barnes and Noble, and valued it on the basis of its profits at the time. Analysts who espoused this alternative frame tended to have a more pessimistic "sell" or "hold" recommendation for Amazon. Furthermore, we find that these frames were robust over time, leading to sustained controversies among analysts over the value of Amazon. We suggest that there is utility in viewing analysts as frame-makers, that is, as specialized intermediaries that help investors value stocks in contexts of extreme uncertainty.

Our perspective contributes to economic sociology with a novel and nuanced portrait of the work of securities analysts. The notion of frame-making qualifies and extends the critics literature by identifying additional devices that critics such as analysts mobilize to supplement categorical schemes, namely, analogies and metrics. At the same time, it departs from the position that analysts exert a conservative influence on the market by documenting the tendency of successful analysts to disrupt, rather than perpetuate, existing industry categorical schemes. In addition, our study also contributes to the literature on analysts' conflicts of interest (Lin and McNichols, 1998; Hong and Kubick, 2002; Michaely and Womack, 1999; Lim 2001; Boni and Womack, 2002, Sargent, 2000; Schack, 2001) by offering an additional explanation for how and why analysts may persist with recommendations that fly in the face of economic evidence. In particular, the case of Blodget suggests that frames play a powerful symbolic role in generating legitimacy, pushing analysts to stick to their frame in order to maintain their credibility.

The paper is structured as follows. After reviewing the academic literature on analysts, we then outline the guiding principles of our grounded theory research design. Next, we examine three episodes in the financial controversy over Amazon, located in December 1998, May 1999 and June 2000. Each of

these yields rich theoretical insights that build up to a rounded perspective on analysts as frame-makers. We conclude by examining the implications for an understanding of analysts as market intermediaries and the social determinants of value in the capital markets.

PERSPECTIVES ON ANALYSTS

Despite the extensive academic attention bestowed upon analysts, existing treatments provide a limited account of their intermediary role. Extant work is best understood as three broad streams. One approach, rooted in the finance and accounting literatures, views analysts as information processors and stresses their activities of search, assembly and communication of information. Another approach, based on neo-institutional sociology and behavioral finance, documents the tendency of analysts to mimic each other. We refer to it as the imitation perspective. Finally, a more recent sociological approach has started to outline the role of analysts as critics.

Analysts as information processors. The information processing literature on analysts rests on a remarkable finding: securities analysts, long regarded as valuation experts, are unable to provide accurate forecasts of stock prices. Beginning with Cowles' (1933) seminal piece, titled "Can Stock Market Forecasters Forecast?" numerous finance and accounting theorists have documented the failure of analysts' recommendations to produce abnormal returns and accurate forecasts of earnings and price targets (Lin and McNichols, 1998, Hong and Kubick, 2002, Michaely and Womack, 1999, Lim, 2001, Boni and Womack, 2002, Schack, 2001).[1]

Two complementary explanations have been put forward to account for this failure. One view, based on the efficient market hypothesis (EMH), argues that accurate financial forecasting is simply impossible in an efficient capital market (Samuelson, 1965; Malkiel, 1973). According to the EMH, stock

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[1] On the other hand, a reduced but important body of research in the information processing literature has made a positive case for analysts. This research has documented several instances in which analysts issue accurate forecasts and profitable recommendations. For example, Elton, Gruber and Grossman (1986) found mild excess returns in the recommendations of a sample of analysts in the month following the recommendation. Similarly, Womack (1996) found that stock prices moved significantly after analysts issued a recommendation. More recently, Barber, Lehavy, McNichols and Trueman (2001) found that securities analysts gave valuable advice if followed to the extreme: they calculated that a strategy of "longing" the highest-rated stocks and "shorting" the lowest-rated ones would have produced excess returns. Malloy (2002) has shown that geographically proximate analysts are more accurate and less optimistic than other analysts. Thus, the empirical case against the processing abilities of analysts is not entirely clear-cut.

prices in a competitive capital market capture all relevant information about the value of a security, following a random walk. There are no mispricings, no possibility for any actor to find extraordinary profit opportunities and indeed, no scope for financial intermediaries to help their clients do so (Fama, 1965, 1991; Samuelson 1967; Jensen, 1968, 1970; Malkiel, 1973). The bleak implication for analysts is that accurate forecasting and lucrative advice are impossible.

An additional explanation for analysts' inaccuracies, based on agency theory, is that the fiduciary relationship between analyst and investor is distorted by a variety of conflicts of interest, producing dysfunctional biases in analyst's forecasts and recommendations. These distortions include investment banking ties (Lin and McNichols, 1998, Hong and Kubick, 2002; Michaely and Womack, 1999), access to company information (Lim, 2001), brokerage interests of the bank employing the analyst (Boni and Womack, 2002), investment interests of the clients of the bank (Sargent, 2000), or the investment interests of the analysts themselves (Schack, 2001). Analysts, in short, come across from this literature as conflict-ridden intermediaries.

The aforementioned conflicts have become particularly prominent following the Wall Street scandals of 2000-2001. During these years, top-ranked Internet analysts (including Henry Blodget) resisted downgrading their recommendations even as prices fell from record highs to zero (Boni and Womack, 2002). Other analysts were recorded privately criticizing companies they publicly recommended (Gasparino, 2005). Such was the public uproar against analysts that the Securities and Exchange Commission even issued explicit guidelines for retail investors to use analyst reports with caution (Securities and Exchange Commission, 2002).

Whether in the form of market efficiency or conflicts of interest, the approaches to analysts presented so far share a common premise: both assume that the core intermediary function performed by security analysts is to forecast the future and provide recommendations. Analysts are accordingly presented as engaged in search, assembly and diffusion of information. To highlight this common focus on information, we refer to this literature as the information processing approach.

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Analysts as imitators. The information processing literature outline above has recently been challenged by work in behavioral finance. In an important attack to the neoclassic emphasis on processing, assembling and calculating data, behavioral theorists have documented the tendency of analysts to imitate each other, that is, to herd (Scharfstein and Stein, 1990; Banerjee, 1992; Trueman 1994; Prendergast and Stole, 1996; Hong, Kubick and Solomon, 2000). According to the seminal work of Scharfstein and Stein (1990), overly comparative compensation schemes such as firing and promoting analysts based on their relative performance push them to herd, that is, to copy each other to the extreme of ignoring their own private information when the latter is inconsistent with the view of the majority. The concept has received important empirical support. For instance, Hong, Kubick and Solomon (2000) found that the career paths of securities analysts make imitation a worthwhile strategy. "Analysts," the authors conclude, "are more likely to be terminated and less likely to be promoted when they make relatively bold forecasts," suggesting that the pressures for herding are present indeed (Hong, Kubick and Solomon 2000: 123).

In a related challenge to information processing, the literature in neo-institutional sociology argues that the search for legitimacy among analysts promotes imitation and conformity (Phillips and Zuckerman 2001; Rao, Greve and David 2002). For instance, Rao, Greve and Davis (2002) argue that the work of analysts is characterized by imitation, and that one reason they do so is that their work conforms to a well-studied decision-making pattern known as "informational cascades." An informational cascade arises when economic actors face a decision in context of risk, decisions are made in a sequential pattern, and the last actors to decide see the decisions made by the first. In those circumstances, the emerging consensus among the first decision-makers creates pressure for subsequent actors to swing in their favor, thereby adding to the consensus and reinforcing the pressure for the following ones. As a result, the last actors to decide invariably end up agreeing with the consensus, even if their private information should make them disagree (Bikchandani, Hirshleifer and Welch, 1992). Rao, Greve and Davis argue that this cascading dynamic characterizes the coverage decisions made by analysts.

In a further attack to the information processing view, Phillips and Zuckerman (2001) showed that middle-status analysts – that is, those with insecure standing in the profession – have a tendency to conform to the expectations of other actors around them, including the executives of the companies they cover and their investment banking colleagues. As a result, middle-status analysts provide a deceiving and over-optimistic portrait of the stocks they cover.

Where is the analysis?

The information processing and imitation perspectives provide complementary perspectives on the shortcomings of the analyst profession. Our overall assessment of this overall literature, however, remains mixed: while purporting to examine the intermediary role played by analysts, existing treatments have glossed over the content of this work itself, that is, over the arguments, tables, charts and figures that make up analysts' reports. As a result, these treatments have overlooked the social, cognitive and material processes that make forecasting possible. In this section we present empirical and theoretical arguments suggesting that a proper understanding of analysis needs to encompass the content of the reports.

Analysis is more than forecasting. One important reason why we reject equating analysis with forecasting is that the latter does not seem to matter to institutional investors, the actual users of analysts' reports. This surfaces clearly from the "All-American" rankings complied by *Institutional Investor* magazine, the most widely-used source of data about the impact of analysts' work. For instance, in the 2003 *Institutional Investor* rankings, the magazine asked its readers to rank in importance eight different dimensions of analyst merit: industry knowledge, written reports, special services, servicing, stock selection, earnings estimates, market making and quality of sales force. Among these, investment recommendations and earnings estimates are ranked sixth and seventh out of a total of eight criteria (see Table 1). The top two criteria, in contrast, were "written reports" and "industry knowledge." This suggests that analysts' arguments and ideas are far more helpful to investors than the brief numbers that the former attach to the reports in the form of recommendations and price targets.[2]

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[2] A recent study by *Investars* provided more quantitative evidence that valuable advice cannot be equated with forecast accuracy. The survey, including more than 400 analysts covering 51 industries during the period 2000 to 2002 ranked at or near the top by the *Institutional Investor* produced the following results. First, only one of the 51

This conclusion is supported by anecdotal evidence from investors and analysts. For instance, the analyst profession has never accepted the idea that their core intermediary function is forecasting prices or recommending stocks: as far back as 1933, analyst Robert Rhea replied to the charge that analysts provided unprofitable recommendations (first formulated by Cowles [1933]) by countering that research reports were intended "as educational pieces, not as investment advice" (Bernstein, 1992: 35). More recently, a top-ranked securities analyst argued in the *Wall Street Journal* that "the analysts' clients (…) could care less if you say 'buy, hold or sell.' They just want to know why" (Kessler, 2001: A18). In a similar vein, a prominent analyst at investment bank Brown Brothers Harriman stated that,

> One reason institutional investors continue to value the work of an analyst whose recommendations have been off-base is that they pay less attention to analysts' recommendations than you might think (…) the institutional clients make their own buy or sell decisions. They want the analyst to add value to their decision-making (Brenner, 1991: 24)

Forecasts and recommendations, then, do not seem to be the key to analysts' work. According to this analyst, investors want diversity in opinions: "an articulate case from both the bull and the bear" (Brenner 1991: 25, cited in Nanda and Groysberg, 2004).

We conclude from this review of investor data that forecasting and investment advice are probably not the core functions that analysts perform. We are led to inquire about the analysts functions that investors do value. Turning again to the survey results of *Institutional Investor*, we ask, what do the top-ranked survey responses, "written reports" and "industry knowledge," actually mean? In particular, how do the "written reports" produced by analysts help investors? What is the nature of the "industry knowledge" that analysts convey?

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highest-ranked analysts was a top-ranked stock picker. Second, 38 to 45 percent of the top analysts turned in a performance below sector average during 2000 and 2001. Third, the returns of half the top-ranked analysts lagged that of lower-ranked analysts. Fourth, none of the 51 analysts ranked "first team" by Institutional Investor were at the top of their industry group based on performance in 2000 and only one did so in both 2001 and 2002 (Morgenson, 2002: 13).

Limited treatment of uncertainty. A related shortcoming of existing analyst literature is that equating analysis with forecasting fails to take Knightian uncertainty into account, yielding an incomplete view of analysts. While the information processing literature assumes that the future is readily calculable, the imitation approach assumes that imitation replaces calculation. In both cases, the difficulties associated with calculating when the future is unknown are overlooked. Similarly, the final numbers provided by analysts are the only output that appears to matter in both approaches: both overlook the question of how those price targets were developed in the first place, how analysts decided between opposing scenarios and where those scenarios came from. In the paragraphs below, we argue that this inattention to Knightian uncertainty leads to an unrealistic and unbalanced view of analysts.

An under-calculative view of analysts. As mentioned above, the imitation literature on analysts is characterized by a lack of interest in the ways in which analysts calculate value. Rao, Greve and Davis (2001), for example, view imitation as an economical alternative to calculation. According to the authors, analysts imitate their peers in contexts of uncertainty just as a driver might imitate other drivers in deciding "how fast to drive on a certain stretch of highway" (Rao et al., 2001: 504). Our position, however, is that imitation does not fully account for the intermediary activity performed by analysts. Whereas imitation emphasizes similarity, we observe a great deal of heterogeneity among them: for instance, none of the Internet analysts within the top five in 1998 retained their status by 2001 (*Institutional Investor* 1999, 2001; Abramowitz, et al., 2000: 136). Another way in which analysts depart from Rao et al.'s imitators is that these professionals are Wall Street's valuation specialists: unlike the occasional driver venturing in an unfamiliar highway, assessing companies is the core job of an analyst. Analysts are generously paid for it; and the positions they adopt can have career-altering consequences for them. Instead of taking shortcuts to avoid the costly work of calculating value, it seems more plausible to expect that analysts will devote most of their time and energy to their valuation models.

Indeed, several prominent economic sociologists have recently emphasized the importance of understanding calculation rather than simply denying it exists (Callon, 1998; Stark, 2000, MacKenzie and Millo, 2003; Granovetter, 2004). As noted by Callon (1998), the assumption that actors never calculate

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(as some sociological treatments make) is as unrealistic as the contrasting neoclassic position that market actors always do so. Instead, Callon argues for granting possibility that actors might calculate, and asks how this might be accomplished. In response he offers an "anthropology of calculation" – that is, a detailed attention to "the material reality of calculation, involving figures, writing mediums and inscriptions" (Callon, 1998: 5). In other words, far from overlooking the social determinants of value, a proper sociological understanding of markets should expand the theoretical scope of "the social" to encompass how collectively constructed calculative technology shapes the encounter between information and prices (Stark, 2000; Granovetter, 2004). From this vantage point, the neoinstitutional work on analysts comes across as an under-calculative rendering of their activity.

An over-calculative view of analysts. While the imitation literature assumes that calculation is rarely feasible, the information processing perspective is hampered by the contrasting assumption that calculation is straightforward and unproblematic. As customary in the rational choice paradigm, Knightian uncertainty is assumed away with recourse to Savage's (1954) theory of Bayesian decision-making. According to Savage's model, rational decision-makers develop probability estimates by updating their subjective prior beliefs as incoming news arrive. Rational updating entails following the rules of Bayesian inference. Accordingly, two Bayesian decision-makers facing the same news with different priors will update their estimates in the same direction, even if not necessarily by the same magnitude. Thus, for example, the arrival of good news about a company should make *all* rational decision-makers value the company more, not less, although by different degrees. However, as additional information arrives and updating continues, actors will converge in their estimates and their final position will be solely shaped by incoming information.

While Bayesian convergence is a useful stylized portrayal of decision making in numerous contexts, a detailed analysis of the cognitive mechanism involved suggests it can easily break down under Knightian uncertainty. If the range of future possible outcomes and probabilities is unknown (Knight, 1921[1971]), unforeseen contingencies prevent Bayesian updating. Such blindspot of Bayesian models has been recognized even in contemporary economic literature, and is referred to as a "zero-probability

event" (Barberis, Shleifer and Vishny, 1998, Brandenburger, 2002).[3] The related concept of ambiguity offers an additional reason. Savage's model assumes that all rational decision-makers classify news in the same manner, whether as positive or negative. But in contexts of ambiguity, that is, of confusion over how a piece of news should be classified (March, 1987), different actors may update in different directions, barring convergence from taking place.

In a world of Knightian uncertainty, economic calculation requires far more conditions than those considered in Bayesian models. Information-processing theories that build on Bayesian treatments do not address how market actors incorporate information into their estimates when this is incomplete, ambiguous, divergent or contradictory. In particular, they do not attend to the social and cognitive mechanisms employed in representing, manifesting, and settling their differences. For that reason, we refer to the processing approach as over-calculative.

Bringing uncertainty back into analysis. A more realistic theory of analysts would address how analysts combine mental models and social cues in their calculations to overcome the challenge of Knightian uncertainty. Empirically, this treatment would explain how the different estimates made by analysts arise, diffuse and evolve among them. Indeed, an emerging stream of literature, centered around the critics literature, has begun to address the significance of Knightian uncertainty for analysts.

Analysts as critics. A recent stream literature led by Ezra Zuckerman argues that analysts should be understood as critics (Zuckerman, 1999, 2004; Zuckerman and Rao 2004). Building on the sociological work on critics developed by Hirsh and Podolny (Hirsh, 1972, 1975; Podolny, 1993, 1994; Benjamin and Podolny 1999; Hsu and Podolny, 2005), Zuckerman argues that analysts function as specialists in conveying the worth of a stock when its value is uncertain. As critics, the activity that analysts perform is fundamentally based on classification: given the difficulty of simply plugging disputed or incomplete information into a valuation formula, analysts assess the value of a company by comparison with other companies in the same category.

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[3] The mechanism here operates as follows. Humans give meaning to information by fitting it into their existing cognitive categories (Bowker and Star, 1999). Lacking a category, as is the case with an unforeseen contingency, incoming stimuli are registered as barely more than an anomaly, rendering the decision-maker unable to take into account relevant information about it.

According Zuckerman, however, the comparative valuation undertaken by analysts takes place in a passive manner, leading to dysfunctional consequences for the companies being valued. Analysts strive to maintain legitimacy in the face of investors. This leads to a rigid insistence on fitting companies into existing slots (as opposed to creating new ones when required), which in turn makes them screen out from their coverage those companies that do not belong to any pre-existing category, depressing their market value as a result. Consequently, analysts create an "illegitimacy discount" for hybrid organizations that perpetuates existing industry structure and stifles innovation.

The critics approach to analysts sets the stage for several interesting and unanswered questions. For instance, how to reconcile the notion of categorical discount with the observation that new analytical categories do emerge? Turning again to the years 1998-2000, we find a new industry category, "Internet and New Media" (*Institutional Investor* 1999: 107, 2001: 179; Abramowitz et al., 2000: 136). Instead of being penalized with a discount, companies in this category – the so-called "dot-coms" – actually traded at a rather generous valuation premium. One implication is that analysts may be drawing on a richer calculative tool-kit than calculation-by-category, giving them the possibility of valuing a company while arguing that it belongs to a new category.

In addition, we observe that those Internet analysts who first granted higher valuations to Internet firms (as Blodget did), went on to enjoy very high rankings in Institutional Investor, suggesting that the creation of new categories plays an significant role in the value that investors accord to a security analyst. This suggests that legitimacy may not be the only pressure that analysts face, begging the question of what parallel forces might be in play.

Pending questions. To sum up, the literature on analysts is best seen in terms three overriding categories: analysts as information processors, as imitators and as critics. Each perspective offers some insight into the roles played by analysts. At the same time, each raises further questions: how do analysts' reports and industry knowledge help investors? How do new industry categories emerge? Why do some analysts become stars, while others remain unknown? These add up to a single central question: in real

time, how do analysts value securities under conditions of extreme uncertainty? It is to this question that we turn our attention in the rest of this paper.

METHODS

This study examines the work of securities analysts with a grounded-theory, qualitative content analysis of selected analyst reports on Amazon.com during 1998 to 2000. We favor grounded theory for its potential to provide fresh hypotheses that break out of the existing theoretical paradigm (Glaser and Strauss, 1967). Our aim, in other words, is not to verify hypotheses from the literature but to develop new ones. In the following paragraphs we describe the different steps that we undertook to build theory, including our choices in theoretical sampling, constant comparison, theoretical saturation and use of data slices.

Research design and sample selection. In operationalizing grounded theory, we chose a qualitative content analysis design. A qualitative approach is, we believe, of particular value because virtually all previous treatments of analysts have focused on quantitative indicators of performance such as price target accuracy or recommendation profitability, ignoring the actual text of the reports. Yet this text is a precious source. It reveals the cognitive processes followed by analysts as it unfolded, free of retrospective reconstruction. It also constitutes the number-one reason why investors value the work of analysts, as noted in the previous section. Content analysis is well established in the organizations literature (see for example Fiol, 1989), and is an emerging method in the finance literature, recently used by Kaplan and Stromberg (2004) in *The Journal of Finance*.

To select our reports, we undertook a theoretical sampling procedure. Our choice of sample, in other words, was made on the basis of theoretical purpose and relevance, rather than the representativeness of the selected reports. Thus, for instance, to address the theoretical issue of how analysts confront Knightian uncertainty, we looked for a company whose future could not easily be extrapolated from the past. We centered on the emergence of the Internet during the so-called technological "bubble" of 1998-2000, a technological discontinuity that induced Knightian uncertainty to the actors involved (Tushman and Anderson, 1986; Garud and Rappa, 1994; Christensen, 1997). Of the

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several candidate Internet companies to be analyzed, the size and visibility of Amazon.com made it particularly appropriate.

Our choice of focal analyst was equally guided by the principle of theoretical relevance. The paucity of research examining the ways in which analysts add value led us to focus on an analyst whose work was clearly appreciated by investors. According to our database, during the period 1998-2000, Amazon was followed by a total of 51 analysts working for 39 banks. These analysts wrote a total of 310 reports with an average length of 8.9 pages. We chose Henry Blodget as focal analyst because his work had a record of extraordinary acclaim: he was ranked number one Internet analyst in the year 2000 by *Institutional Investor* (see Table 2 below), and received one of the highest annual compensations of the industry, totaling $15 million in 2000. Blodget was also the most prominent Amazon analyst, with 80 appearances in television only in 1999 (Gasparino, 2005).

Insert Table 2 and Figure 1 about here

Inference of hypotheses. To develop our theoretical categories, we followed the constant comparative method advocated by Glaser and Strauss (1967). We contrasted Blodget's reports with those of rival analysts with maximally different messages. Blodget's tenure as analyst of Amazon.com spanned 28 months, form October 1998 to March 2001. During this time, he issued 63 reports on Amazon taking up between 1 and 31 pages (see Figure 1). Of those reports, we focused on four specific documents and the controversy they spawned with rival analysts:

1. December 1999, Blodget vs. Cohen. Our first comparison concerns the striking difference between the reports of Henry Blodget and Merrill Lynch analyst Jonathan Cohen. We took Blodget's December 1998 piece as our starting point because that particular report is the one that brought him prominence: as *Institutional Investor* openly stated, "Blodget is best known for his mid-December call on Amazon.com" (*Institutional Investor,* 1999:107). On December 16th 1998 Blodget valued Amazon at $400 and issued a "buy" recommendation. However, on the same day –barely hours after Blodget's report– Jonathan Cohen countered with one that valued Amazon at $50 and recommended investors to

sell the stock. A comparison of the two reveals that the reason for the difference was their respective margin and revenue estimates. Our examination of how they developed these estimates suggests a new theoretical category, which we denote "calculative frame".

2. May 1999, Blodget vs. Abelson. Our second sampling choice involves the reports of Henry Blodget and *Barron's* journalist Abel Abelson in May 1999. Having developed the concept of calculative frames, we asked ourselves, how do these affect analysts' valuations? A controversial incident among Blodget and Abelson gave us an entry point into the issue. In May 1999, *Barron's* journalist Abel Abelson issued a negative article about Amazon following the company's announcement of greater-than-expected annual losses. Blodget replied to Abelson by re-interpreting Amazon's losses as a sign that the company was investing for the future. This disparity gave us the opportunity to see how analysts used their frames to incorporate ambiguous news into their valuations, and led to a new construct, "framing controversies." This second choice of sample also illustrates how we followed the "inclusive sampling" methodology advocated by Glaser and Strauss (1967), that is, how we adapted our selection of data to the questions raised by our emerging theory.

3. June 2000, Blodget vs. Suria. The third episode of interest centers on a debate between Blodget and analyst Ravi Suria of Lehman Brothers. Having found from the controversy with *Barron's* that frames had such persistence, we asked, when and why would analysts abandon a calculative frame? The occasion to learn about this presented itself in June 2000, when Internet analyst Ravi Suria issued a report raising the possibility that Amazon might default on its bonds. Blodget countered Suria's attack with a report that explicitly rejected the possibility of a default. However, fellow analysts and investors abandoned Blodget's frame and optimism, downgrading the stock by the end of July 2000. The episode gave us the opportunity to assess the context in which they operated, yielding a new theoretical category, "asynchronous confrontation." Once more, our selection of the data was controlled by the emerging theory instead of proceeding independently from it (Glaser and Strauss, 1967).

Our sampling process stopped when we reached theoretical saturation. All in all, we examined three focal incidents in a controversy spanning the period September 1998 to July 2000, including the

upward cycle in the Internet bubble, the crash of April 15th 2000 and its subsequent deflation, spanning a total of 63 reports by Blodget and ten by rival analysts. Having analyzed three episodes in the controversy over Amazon, we noted that the elements and properties of calculative frames held with regularity: in all three cases, the analysts used categories, analogies and metrics.

Data and sources. Our primary sources of data were the analyst reports contained in the *Investext* database and the analyst rankings of *Institutional Investor* magazine. We obtained full-text Adobe PDF files of reports of these analysts from *Investext*, a database that stores the research reports written by analysts from investment banks and other financial research institutions. The rankings of securities analysts during the years 1998-2000 were obtained from *Institutional Investor*. The magazine, a trade publication for large investors, has ranked sell-side analysts since 1972 in what it describes as its "All America Research Team," and is sometimes referred to as the "analysts' Oscars" (Nanda and Groysberg, 2001:7). The ranking is based on the survey responses of the readers of analyst reports, institutional investors, and it evaluates the performance of analysts according to eight criteria (see Table 1). These rankings are widely regarded as a good proxy for analyst's performance, and have been extensively used in the academic literature on analysts as the paramount subjective measure of analyst quality (see, for example, Phillips and Zuckerman, 2001). Furthermore, these rankings are also crucial for the analysts themselves, as a position on the All-America Research Team is one of the three most important criteria for determining analyst pay (Dorfman, 1991).

We also relied a variety of ancillary sources such as price charts, the business press and interviews to analysts and portfolio managers. We contrasted Blodget's views with the positions of other analysts in top investment banks (Goldman Sachs, Deutsche Bank, etc.) using *Ratingplotter* charts, an analytical tool developed by *Investars*, a business provider of financial information. We obtained information on the context surrounding the reports among analysts from the *New York Times*, *The Economist* and *The Wall Street Journal*. We also benefited from interviews with three analysts and one portfolio manager. Such hybrid sources are key to the density of the emerging categories in a grounded theory design, and are referred to as data slices (Glaser and Strauss, 1967: 65).

Additional considerations. Finally, we would like to highlight two important characteristics of our grounded research design. First, we note that the empirical validity of our findings is not based on the size of our sample. Instead, our process of constant comparison aims at generating new hypotheses (Glaser and Strauss, 1967). The findings reported here, however, have yet to be explored in other settings.

The second observation pertains to the involvement of our focal analyst, Henry Blodget, in the analyst scandals of 2001. On November 2001, Blodget abandoned his job at Merrill Lynch as part of a judicial settlement with the Attorney General of New York, Eliot Spitzer. The settlement followed an investigation of Blodget's internal communications with his colleagues at Merrill Lynch, revealing internal e-mails in which Blodget criticized some of the companies that he was officially recommending. The abrupt end of Blodget's career as security analyst might be interpreted as evidence that Blodget was not helping investors but simply deceiving them, rendering his reports an inadequate data source to learn about the mental models used by analysts.

As we explicate below, however, our position is that Blodget's conflicts in fact add, rather than detract, to our analysis. We note, first, that the episodes of conflict took place after the time period that we examine, and for companies different than Amazon (we elaborate this point in the next section below; see also Gasparino, 2005). Second, Blodget's tragic finale still begs a question that the literature on conflicts of interest does not fully address: how it is that analysts such as Blodget were able to convince investors and rise to the top of the rankings despite hovering suspicions of conflict? Our explanation is that Blodget had an extraordinary ability to generate a compelling argument to persuade under conditions of extreme uncertainty, that is, a frame. Frame-making and conflicted interests, then, are complementary explanations for the phenomenon at hand.

THE FINANCIAL CONTROVERSY OVER AMAZON.COM

Barely one year after Amazon's debut on Wall Street, a sharp controversy over its value erupted among Wall Street analysts. The company had opened up for business on the Web in 1995, and placed itself under the eye of investors with its initial public offering in 1997. In a year, the stock price had risen with record speed to unprecedented heights. As one of so many business cases put it, "never in the history

of financial markets had a company reached such market capitalization … without a single dollar in profits" (González, 2000:11). Accordingly, a widespread debate ensued about the merits of the company, as well as about the Internet and electronic commerce in general. The controversy continued until the end of the year 2000, when the company's mounting losses settled the case against the optimistic case for Amazon. In this section we examine three episodes of this controversy and their lessons for the work of securities analysts.

First episode: Blodget vs. Cohen

On December 16th 1998, investors were faced with a blunt dispute over the value of Amazon. Henry Blodget, an Internet analyst at Canadian bank CIBC Oppenheimer, raised his price target from $150 to $400 following the company's stellar Thanksgiving sales. Such brusque change in the analyst's recommendation was exceptional enough to be featured on the *Wall Street Journal*. On that same day, however, Jonathan Cohen of Merrill Lynch advanced a very different perspective: in a research note on the company issued hours after Blodget's report, Cohen rated Amazon a "sell" and valued it at $50, arguing that it would never be able to reach the profits that Blodget predicted. The resulting controversy among investors was such that trading volume in Amazon stocks surpassed $100 millions, more than ten times its average. In the end, the episode resolved itself in Blodget's favor. The stock exceeded the $400 price target in three weeks, and Blodget entered *Institutional Investor*'s All-Star team.

The uncertainty, tension and drama of December 1998 are hardly consistent with the analyst literature. The information-processing approach presents analysts as aiming for forecasting accuracy, but the disparity between the two analysts seems too wide to be attributed to inaccuracy or measurement error. Similarly, the neoinstitutional literature presents analysts as averse to deviating from the consensus and unwilling to upset the companies they follow, but we find Blodget and Cohen clashing directly with each other, ignoring the consensus and, in the case of Cohen, bitterly criticizing Amazon. What, then, accounts for the sharp divergence among the analysts?

Explaining disparity: Information asymmetry and heuristics. The analyst literature hints at additional hypotheses that warrant examination. The information processing view, for example,

emphasizes the presence of informational asymmetries in the work of analysts, begging the question of whether one analyst knew something that the other did not. Similarly, the literature on herding and heuristics prompts the question of whether the analysts were rationally calculating, or relying on shortcuts instead. To address these questions, we examine the full text of the reports written by both analysts.

A first reading of Blodget's report does not reveal obvious instances of misinformation or oversimplification. Consider, for instance, the reasons for his change in opinion. The analyst justified his brusque increase in price target from $150 to $400 by referring to a specific piece of news, and accounted for it with detailed calculations: "the number of orders on the day after Thanksgiving," Blodget wrote in December 1998, "were four times those in the year-ago period" (Blodget and Anning, 1998: 1). The news was certainly significant, for Thanksgiving sales are commonly deemed in the retailing industry to be the best proxy for Christmas sales, and the latter typically account for half of total annual sales in retailing. A retailer experiencing a four-fold increase in Thanksgiving sales could well be expected to report an increase in annual sales of similar dimension. Thus, it is conceivable that the news described by Blodget required the valuation of Amazon to be sharply updated.

Similarly, Blodget relied on detailed financial calculations to incorporate news of Thanksgiving sales into Amazon's stock price. He explained his calculations as follows:

> We arrived at our new price target by averaging the results of few different valuation exercises: 1) we applied the stock's current price-to-forward-revenue multiple, 15X, to our official 2000 revenue estimate of $1.5 billion (yielding a $380 target), 2) we applied the stock's revenue multiple in our aggressive-growth scenario, 10X, to our aggressive-growth 2000 revenue estimate of $3.0 billion (yielding a $500 target), and 3) we discounted our five-year aggressive-growth EPS estimate of $10 at a 20% rate (yielding a $300 target) (Blodget and Anning, 1998: 2)

Blodget thus introduced Amazon's exceptional Thanksgiving sales into his assessment with a meticulous computation of revenues, multiples and discount rates. He was not, in other words, simply relying on heuristics. We tentatively conclude from this first examination that Blodget's work appears to be both informed and rigorous.

Like Blodget's, Cohen's report does not show signs of heuristics or informational asymmetry. In his December report, Cohen and Pankopf (1998b: 1) explained in detail the reasons for his skepticism on Amazon. He wrote:

- A competitor announced this morning it thinks the shares could reach $400.
- In our view, there has been no change in the fundamentals to justify the current share price
- We feel the stock is very expensive currently trading at a market capitalization of roughly $15-16B and price to revenue multiple or about 15.5X our C99E.
- We do not believe the shares are trading on its current fundamentals and maintain our intermediate Reduce.

Several elements in this text suggest that Cohen was both informed and purposefully calculative. First, Cohen cited Blodget's report ("a competitor"), suggesting he knew about the surge in Thanksgiving sales discussed in it. Second, Cohen specifically noted that there had been "no change in the fundamentals" to justify Blodget's $400 price target, indicating he was aware of the news. Third, Cohen did not seem to rely on heuristics. He was not only actively counting, but in fact denouncing oversimplification on the part those who awarded the firm a high market capitalization. Cohen, in short, appears both knowledgeable and rigorous.

To summarize, the discrepancy between Blodget and Cohen does not seem to result from informational asymmetries or heuristics, as the literature would suggest. However, these December reports are part of a longer sequence that began when the two analysts started their coverage of Amazon in September 1998. This is clear from the many unexplained labels and categories that clutter the December pieces: Blodget's "2000 official scenario," or Cohen's "C99E" earnings estimate, which are mentioned in December but developed in earlier pieces. What do these mean? To find out, we trace the roots of the divergence among the analysts to the meaning of the facts and figures that they mobilize, turning to the first reports where these figures first appeared.

Behind the numbers: formulae and estimates. A broader survey of the work of Blodget and Cohen, including their September and October reports, offers new clues about the origin of their disparity. Between September and December 1998, Blodget and Cohen wrote a total of five documents each. These reveal the nuts and bolts of their calculative technique. One such tool was his formulae, responsible for

Blodget's $400 price target. Blodget relied on a *discounted earnings* approach, a mathematical expression that measures a company's worth by "discounting," or folding back into the present, the value of the earnings that a company is expected to generate in the future. Like Blodget, Cohen also valued Amazon with the use of a mathematical formula. Unlike him, Cohen chose a slightly different *price-to-revenue multiple* expression.

The differences among these two formulae, however, are not the key to the analysts' disparity. According to the standard valuation manuals, the revenue multiple approach used by Cohen is in fact equivalent to a discounted earnings approach used by Blodget (Damodaran, 2000). Indeed, Cohen himself pointed out as much: in a special section on valuation methodology he wrote that his method was "meant to embody a more traditional forward price/earnings analysis" (Cohen and Pankopf, 1998a: 10) such as that used by Blodget. We conclude, therefore, that the choice of mathematical expression is not the source of the disparity between the two analysts.

Further examination of the early reports reveals that the key to the difference lied instead in the analysts' choice of estimates. Cohen's revenue estimate for the year ending in December 2000 was $0.8 billion (Cohen and Pankopf, 1998a:10), whereas Blodget's was three times higher, totaling $2.5 billion (Blodget and Erdmann, 1998: 10). Similarly, Cohen's operating margin estimate stood at a conservative 10 percent (Cohen and Pankopf 1998a:6), versus a more generous margin estimate by Blodget of 12 percent (Blodget and Erdmann, 1998: 13). Compounded in their respective formulae, these differences produced the valuation gap of $400 versus $50.

In accounting for the disparity, it is crucial to consider that neither analyst had any factual information about these precise magnitudes. Such opacity is only to be expected, for the two were valuing Amazon two full years before the actual figures for margin and revenue in the year 2000 would be made available. This underscores the Knightian challenge in equity valuation, namely, the problem of discounting a future that is unknown.

Insert Figure 2 about here

How do analysts develop estimates? Despite the lack of factual data, both Blodget and Cohen produced a single numerical estimate of Amazon's future margin and revenue, a task whose significance now comes into full view. This not only highlights the challenge involved in the analysts' work, but also their remarkable ability to overcome it. In this section we examine how the analysts translated into numbers a future that had not yet unfolded, focusing on the analysts' accounts for their choice of margin and revenue estimate.

1. Margin estimate. Blodget estimated an aggressive 2003 operating margin of twelve percent. In explaining his figure, Blodget first rejected the use of Amazon's *current* profits to predict the *future* operating margin of the company. As a young start-up company, Blodget argued, Amazon was still in its initial money-losing phase. The proper proxy for Amazon's long-term margin was instead the margin of a similar company. Blodget went on to consider four possible similar companies, from book retailers to Internet portals. He wrote:

> Most investors appear to come to one of four conclusions regarding the future profitability of Amazon.com's business model: (1) It will never make any money; (2) It will have a 1%-2% net margin, like other retailers; (3) It will have an 8% net margin, like "direct" manufacturer Dell, or (4) It will have a 15% net margin, like a Dell-Yahoo hybrid (Blodget and Erdmann 1998:13).

Of these, Blodget opted for Dell Computers and its "direct" sales model. Both companies sold directly to customers, and both had the same gross margin. Thus, Blodget concluded, "a mature Amazon.com will be able to generate Dell-like profitability." (Blodget and Erdmann 1998: 13).

Cohen's margin estimate, on the other hand, was a more modest ten percent margin. He justified this lower figure by categorizing Amazon as a bookstore and adding that bookstores are characterized by low operating margins. He noted:

> Bookselling is an inherently competitive and low-margin business. Because the intellectual property value contained in published works typically represents only a small portion of the price to end-users, we do not expect that moving that business to an online environment will meaningfully change those characteristics (Cohen and Pankopf 1998a:1).

Thus, in short, Cohen emphasized Amazon's book selling core, ignoring the company's potential to leverage its e-commerce capabilities into other products.

To this categorization-based argument, Cohen added an analogy: Amazon, Cohen argued, was like Barnes and Noble. Indeed, Cohen went as far as to argue that Amazon was even inferior to it in several ways because, as he noted:

> Amazon's current market capitalization of $4.0 billion is roughly equivalent to more than twice the capitalization of Barnes and Noble, a highly profitable company with more than 1,000 retail outlets and a vastly larger revenue base (Cohen and Pankopf 1998a:3).

2. Revenue estimate. Blodget estimated Amazon's revenue for the year 2000 at a very aggressive $2.5 billion, whereas Cohen estimated far more conservative revenues of less than $1 billion. Blodget justified his estimate by proposing that Amazon belonged to an entirely new industry category, "the Internet company." He argued:

> We see [Amazon] as an electronic customer-services company in the business of helping its customers figure out what they want to buy (...) and then delivering it to them at a good price with minimum hassle (Blodget and Erdmann, 1998: 1).

> We see no reason, therefore, why Amazon will stop with books, music, and videos. Over the next few years, we wouldn't be surprised were it to add software, toys, credit cards, auctions, foods or whatever product offering makes sense (Blodget and Erdmann, 1998: 20).

Thus, we see that Blodget estimated without concern for the number of books or CDs sold that the figure implied. His categorization was crucial in allowing him to develop the estimate.

Cohen also relied on categories to justify his choice of margin estimate. Unlike Blodget, he categorized Amazon as a bookseller. This implied a more limited revenue growth, for book retailing as a whole "is an inherently competitive and low-margin business" (Cohen, and Pankopf, 1998a: 1).

Categories, analogies and key metrics. We observe a striking regularity in the arguments of these analysts: both draw from categories, anabgies and key metrics. While Blodget justified his margin and revenues estimates by arguing that Amazon was an Internet company, Cohen estimated a narrow profit margin for Amazon because he categorized it as a bookseller. Whereas Blodget expected Amazon to have a Dell-like profitability, Cohen argued that its margins would not exceed those of Barnes and Noble. And whereas Blodget focused on 1998 revenue, while Cohen was Amazon's 1998 losses.

This regularity in their differences pervades the rest of the two reports. While space constrains prevent us from conveying a more exhaustive account of the role of these three elements, Table 3 below provides a fuller description. The table displays a selection of quotations from both analysts along its left and right columns, grouped under three rows depending on whether they are related to a category, analogy or key Amazon metric. Thus, for example, the top left cell provides four separate instances in which Blodget categorized Amazon as an Internet firm, while the top right cell shows how Cohen categorized Amazon as a bookstore. The table makes clear that categories, analogies and metrics are not simply part of the reports, but centrally constitutive of them.

Insert Table 3 around here

Calculative frames. The regularities described so far suggest that the combined use of categories, analogies and metrics in analysts' reports makes up a whole with an entity on its own. To underscore this point and highlight its theoretical relevance, we denote by *calculative frame* the internally consistent network of associations, including (among others) categories, metrics and analogies, that produce the necessary estimates which go into the valuation of a company. (See Figure 3 for a representation of these frames).[4]

Insert Figure 3 about here

The concept of calculative frame builds on Goffman's sociological notion of frame analysis, which defines frames as "principles of organization" that govern "social events and our subjective involvement in them" (Goffman, 1974: 10). But whereas existing theory has used frames to explain participation by members of social movement (Snow, Rochford, Worden, and Benford, 1986), our notion

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[4] Another regularity that emerges from comparing the reports is a remarkable consistency between each analyst's choice of categories, analogies and key metrics. Blodget's categorization of Amazon fit his choice of analogy, for presenting the firm as a technology-intensive Internet company invited associations with Dell Computers. Blodget's analogy also fit with his choice of metrics, for viewing Amazon as a start-up Internet company suggested that revenues, not profits, were the relevant measure of value. The same applied to Cohen's frame (see Table 3). Thus, we note that the choice of category, metrics and analogies were not capricious, but internally coherent in a way that made the set of three more than the sum of their parts.

of calculative frames highlights their utility for the purpose of valuation, that is, to use frames to explicate how analysts are able to measure worth in the face of uncertainty.

Securities analysts as frame-makers. The notion of calculative frame suggests a new perspective on the intermediary function performed by analysts. The rise of Blodget from obscurity to celebrity following his December call indicates that providing new frames is an important part of analysts' work. Doing so helps investors by equipping them with the tools that are needed to measure company value. Accordingly, we denote by *frame-making* the activity of creating, providing, and promoting calculative frames such as we see in the work of Blodget and Cohen. The expression frame-making echoes Weick's (1995: 4) cognitive notion of sensemaking, but pertains to the domain of market intermediaries rather than managers, and narrows its scope from cognition in general to securities analysis. Whereas sensemaking can take the form of a sentence, a remark, a vision or even a simple act, frame-making involves a set of text and numbers that allow investors to turn qualities into quantities. Frame-making, in short, involves interpreting but also counting, measuring and metering. Frame-making also relates the work of analysts to the strategy literature on the use of analogies and frames (Gavetti, Levinthal and Rivkin 2005; Kaplan 2004).

We find further evidence for frame-making in newspaper accounts that emphasize the cognitive guidance provided by Blodget. Thus, for example, according to the *New York Times*, Blodget's work was "a guide for some investors looking for a roadmap to the new economy" (Hakim, 2000: C1). Similarly, *TheStreet.com*, the premier Internet site for financial commentary, referred to one of Blodget's analyses as follows: "None of this is shocking or even novel. But once again Blodget has done what he does best: he has put the whole universe of consumer Net stocks into perspective" (Lashinsky, 2000).

Second episode: Blodget vs. *Barron's*

The notion of frame making put forward above gives rise to a pressing question: How do these frames shape the way analysts use information? A subsequent episode in the controversy over Amazon speaks to this issue. In April 1999, Amazon announced larger end-year losses than it initially anticipated. One month later, a highly critical article in *Barron's* written by journalist Abel Abelson interpreted

Amazon's statement as proof that the company was severely over-valued. Shortly after, Blodget challenged Abelson's arguments in a special research report, titled "Amazon.Bomb? Negative Barron's Article." Again, we see two disparate reactions to the same piece of information, namely, Amazon's expected 1999 performance.

Consider first Abelson's article. The journalist criticized Amazon's strategy on several grounds: margins in book retailing, he claimed, were low. Amazon's model of a virtual bookstore did not help, for the company was spending too much in acquiring customers. Amazon's expansion into CDs "only (…) proved so far (…) that it can lose money selling books and lose still more money selling CDs" (Abelson 1999: 5). Compared to Barnes and Noble, Abelson concluded, Amazon was overvalued. The journalist proposed a total value for Amazon between $10 and $25, a paltry one seventh of the company's market price at the time.

Blodget's reply to Abelson's used the information mobilized by the journalist, interpreting it differently. Blodget began his report by acknowledging Abelson's criticisms, but went on to address each of the points raised by the journalist and concluded that most of them were not reasons for concern and that indeed, in some cases, a reason to buy the stock. Consider, for example, Blodget's treatment of Amazon's lack of profitability. As noted above, Abelson had emphasized Amazon's losses. In reply to this, Blodget wrote,

> As any smart investor understands, there is a big difference between 'losing' money and 'investing' money. Amazon.com is investing money, not losing it, so near-term profitability is not a good measure of future worth. Put another way, if Amazon.com were to cut back on its investments in order to post a near-term profit, we believe it would be worth considerably less in three to five years than it will be if its current investments pay off. (Blodget and Anning 1999:6).

Blodget thus presented Amazon's losses as investments, performing a judo-like maneuver that reinterpreted his opponent's information in a way that not only altered but actually *reversed* its implications.

As with the previous episode, space constraints prevent us from providing a full account of the frames involved in the controversy. A more complete account is included in Table 4, which shows the

different ways in which the analysts categorized, established analogies and proposed metrics for Amazon.com (Internet firm vs. bookseller, Dell vs. Barnes and Noble, and revenue growth vs. operating earnings). The table finally shows how radically different their conclusions were. These differences are graphically represented in Figure 4.

Insert Table 4 and Figure 4 about here

Interpretation vs. Bayesian updating. The disparity among the two analysts' assessments challenges the Bayesian model that inspires the information processing literature. According to Bayes' model, all rational analysts should update their probability assessments in the same direction; instead, we observe that Blodget and Abelson did so in opposite ways. Furthermore, these differences can be explained by the frames used by the analysts. Abelson categorized Amazon as a traditional retailer, saw it analogous to Barnes and Noble, and chose to focus on its lack of current profitability. As a result, greater losses were for him an additional sign that Amazon's business model was not working. Blodget, on the other hand, did not see 1999 losses as a relevant measure of future value. This prompted him to focus instead on how the company's investments could increase its future revenue. We see, then, how analysts' frames shaped their interpretation of the news. The theoretical lesson here is that in contexts of ambiguity, when different and inconsistent bodies of meaning are available to explain the same set of news, analysts accord meaning to it with recourse to their existing frame. The implication is that calculative frames mediate how analysts accord meaning to information.

Framing controversies. An additional lesson from the episode is that debate and discrepancies about frames persist over time. Comparing Blodget's December frame with the one in May, we see that news of greater losses did not make Blodget modify his December 1998 frame; instead, it prompted him to redefine the news as positive. We conclude that analysts tend to persist in their positions due to perseverance in their frames, and refer to these continued disparities as *framing controversies*: sustained differences in valuation that arise from a disparity in calculative frames.

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The notion of framing controversies builds on the notion of scientific controversy developed in the literature on social studies of science and technology. A controversy is defined in this stream of research as the existence of "alternative accounts of the natural world" whose persistence in the face of experimental data suggests that these "are not directly given by nature, but (…) as products of social processes and negotiations" (Martin and Richards, 1995: 510; see also Bloor, 1976; Nelkin, 1979; Latour 1987). The notion of framing controversies extends this notion to the arena of the capital markets.

Contemporary newspaper accounts attest to the existence of a controversy over the value of Amazon, not only between *Barron's* and Blodget but in fact among most Amazon analysts. For instance, McGough and Wingfield (2000) of the *Wall Street Journal,* commented extensively on the divergence in price targets and recommendations among different Amazon analysts. They wrote,

> Amazon is now the scene of (…) widespread, fierce and public disagreement among brokerage-house research analysts. Analysts clash over the company's business plan, its prospects during the coming holiday season and how quickly it can turn a profit (McGough and Wingfield, 2000: C1)

The *Barron's* dispute, in other words, was not an exception but the norm. Indeed, the journalists went to the extreme of describing Amazon as "a modern-day version of Kurosawa's classic film 'Rashomon,' which recounts different versions of the same incident" (McGough and Wingfield, 2000: C1).

The presence of controversies provides additional insight on how and why conflicts of interest might arise (Boni and Womack, 2002, Securities and Exchange Commission, 2002). A compelling calculative frame, once put forth by an analyst, becomes "sticky". Frames are ways of thinking about what might transpire in the future, and hence devices for enactment. Because they have been articulated in public domain and are volitional, analysts become associated with their frames and cannot easily abandon them. Their very credibility becomes tied up with the framework that they have espoused in real time. Over time, though, the specifics of a particular framework may not unfold, and, in such an eventuality, the

analyst losses credibility over time and can post hoc be viewed to have been driven by conflict of interest.[5]

Third episode: Blodget versus Suria.

The two previous episodes present the work of security analysts as ongoing controversies over how to calculate Amazon's value. But seeing analysis in terms of divergence rather than consensus leads to an important question: if a frame can coexist with its opposite for a sustained period of time, does that mean it can survive forever, in spite of accumulated disconfirming evidence? In other words, are framing controversies ever closed? And, if so, how? To address these questions, we set out to examine the mechanisms of frame-adoption and frame-abandonment used by analysts and investors. We center on a third and final episode which presents a striking change in the fortunes of Henry Blodget.

On June 3rd 2000, analyst Ravi Suria of Lehman Brothers wrote a scathing report on Amazon. Suria, a convertible bond analyst, proposed a broad revision of prevailing thinking about the company: Amazon, he argued, was a traditional retailer. When measuring the company as such, its performance appeared rather mediocre. Furthermore, Suria argued, the company could well run out of money within a year. The analyst rated Amazon a "sell," prompting intense trading activity during that day as well as several articles in the financial press (e.g., *The Economist,* 2000: 65).

One month later, on June 29th, Blodget countered Suria's attack with an optimistic report on Amazon. The report emphasized the company's similarities with America Online, an Internet company that overcame difficulties and produced outstanding returns to investors. This time, however, Blodget's arguments failed to persuade investors. The price of Amazon began a long decline. The analyst gradually

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[5] Indeed, six months after the episode described so far, Blodget was involved in a series of internal communications at Merrill Lynch that gave rise to a scandal. Following Eliot Spitzer's investigation, Blodget was famously found to have expressed private reservations by email about companies that he publicly recommended (Gasparino, 2005). As noted above, this could be taken to mean that what we observe in Blodget's reports is just an outcome of his conflicted position. However, the factual evidence for Blodget's insincerity suggests that all possible wrongdoing took place after the time period considered in this paper. The private emails in which he did so were sent after July 2000, and for companies different than Amazon. In particular, the messages were written in November 2000, December 2000 and during the year 2001, once the dot-com crash sank in the analyst's outlook and the price of Amazon. The companies discussed in those emails were Internet Capital Group, Infospace, Go2Net and GoTo.com, but not Amazon (Gasparino 2005: 119, 120, 121).

fell out of favor with portfolio managers in the *Institutional Investor* rankings, and Suria's contrarian success turned him into a star analyst (Vickers 2000: 25).

Blodget's reversal invites the question of what led investors and fellow analysts to believe him in December 1998 and change course two years later. The reports themselves do not answer this, for both Suria's attack and Blodget's defense of Amazon relied on a solid, three-pronged calculative frame based on categorizations, analogies and key metrics. This emerges clearly from the detailed comparison displayed on Table 5 of Suria and Blodget's reports (see Figure 5 for a visual representation). In search of an explanation, we enlarged our lens to include the economic and social context surrounding the analysts at the time.

Insert Table 5 and Figure 5 about here

Perhaps the most crucial background event in June 1999 was the continued unprofitability of Amazon.com. Back in 1998, Blodget had asked investors to wait for three years before demanding profits. He recommended the stock for "strong-stomached, long-term investors," and wrote that he "expected the company's accumulated deficit to balloon to more than $300 million before it finally starts reporting profits in the spring of 2001" (Blodget and Erdmann, 1998: 25). Two years later, however, that profitability seemed more distant than ever. By October 1999 Amazon announced that it would pursue diversification rather than higher profits. Blodget reacted to this by claiming to be "simply exhausted by the endless postponement of financial gratification" (Veverka, 1999: 64). On July 26th 2000, Amazon even failed to reach the revenue figure that Blodget predicted, making the analyst appear hopelessly out of touch. On the following day, six analysts simultaneously downgraded their recommendations for Amazon.

Determinants of frame adoption and abandonment. The June 2000 episode suggests that analysts confront frames with ongoing economic events. This confrontation is not immediate: frames involve simplified representations of the future, and as such they are impervious to disconfirming data in the present. But as time passed and the future became the present, analysts gained the ability to confront

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analysts' claims with economic information that the company itself compiled and released. Thus, whereas Blodget's claim that Amazon would produce profits in 2001 made him invulnerable to the company's losses in May 1999 (and allowed him to prevail over Abelson), one year later, with Amazon still suffering losses despite a staggering volume of sales, the same claim was rejected by other analysts and investors. To highlight the theoretical significance of this mechanism, we denote it by asynchronous confrontation.

The concept of asynchronous confrontation builds on notion of "trials of strength" developed in the sociological literature of science and technology studies. A trial of strength is defined as a scientific test staged in front of an audience with the aim of persuading it (Latour, 1987). The archetypical example is the test for microbes in cows famously conducted by Pasteur in 1854. In Pasteur's test, the destiny of a group of cows infected with invisible microbes was publicly showcased to doctors, journalists and curious passers-by, along with a control group of uninfected ones. One after the other, the infected cows died while the uninfected ones survived, persuading witnesses and the country as a whole that microbes were real. Following the experiment, the Pasteurian revolution in biology took off and swept over France in the 19th century.

Trials of strength are central to the careful balance between naive realism and relativistic constructionism that characterizes the stream of science studies known as actor-network theory (Latour and Woolgar 1979; Latour 1987, 1988; Callon, 1986, 1994). The observation that scientists such as Pasteur resort to staging their tests suggests that whether a scientific claim is accepted or not depends as much on the inherent qualities of their claim as on what other scientists subsequently do with it. Claims become "facts" when they are adopted, cited and corroborated. In other words, actor network theorists see science as being constructed to some extent.

On the other hand, actor-network theorists add that the acceptance of a theory cannot be reduced to the social dynamics among scientists. Contestation and fallibility do matter: in the case of Pasteur, for instance, children were sickened by real microbes, not by arbitrary social forces. Thus, the process whereby a claim becomes a fact is seen in the actor-network perspective as a heterogeneous project in which money, resources, statements, objects, people and numerous other things are linked in a sufficiently

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strong chain, sturdy enough to withstand public confrontation with data. Sturdy enough to withstand trials of strength.

The notion of asynchronous confrontation extends actor-network theory to the capital markets, along with its nuanced balance between naïve realism and radical social constructionism. Specifically, asynchronous confrontation argues that whereas analysts often ignore or reinterpret economic data that disconfirms their own frame, the economic fortune of a company is crucially important for valuations, as it matters to the choice of frame that other analysts will ultimately espouse. Frames, in short, are eventually confronted with hard data. But this confrontation is not immediate. Instead, it takes place after some time, and certainly not before the Knightian uncertainty has been resolved with the generation of new data . Hence the term "asynchronous." We see asynchronous confrontation at work in the abrupt rejection of Blodget's frame by fellow analysts in July 2000.

The central importance of time in asynchronous confrontation is consistent with emerging academic treatments in the innovation management. In the innovation literature, Garud and Karnoe (2001) have argued that some frames incorporate time into their construction. These authors coined the expression "deviation step" to denote a period of time during which innovators close themselves to feedback from outside to be able to make progress within the confines of their perspective. In this manner, confrontation with data is purposefully rendered asynchronous with its availability.

DISCUSSION

Our comparison of reports in the previous section has produced four core concepts that address the meaning of analysis under uncertainty: calculative frames, frame-making, framing controversies and asynchronous confrontation. These concepts build up to a comprehensive theory of analysis under uncertainty around the notion of frame-making, detailing the elements of a calculative frame: how it appears, how it functions and when it is abandoned. In the following paragraphs we revisit the three Amazon episodes, centering our attention around the main theoretical themes developed so far and consider how our theory relates to alternative accounts of securities analysis.

How are calculative frames created?

The first incident in the controversy over Amazon provides suggestive information on the nature and origin of calculative frames. On December 16, 1998, Henry Blodget and Jonathan Cohen issued opposing recommendations and price targets for Amazon.com. Our reading of their reports pointed to the estimates used by both analysts as the key source of this disparity. Further analysis suggested that this was in fact created by differences in the choice of categories, analogies and metrics. We refer to their respective choices as calculative frames, and propose that developing these frames is a central intermediary function performed by securities analysts. We refer to this activity as frame-making.

The notion of frame-making emphasizes the payoffs of novel and original analysis, challenging the neo-institutional emphasis on imitation. As noted, the analyst profession is structured around the status ranking assembled by *Institutional Investor*. As with any other ranking, visibility breeds recognition and vice-versa, leading to a potentially closed loop in which newcomers are excluded from the top. One way in which unknown analysts can break into high-ranking positions is by offering investors a dramatic profit opportunity. In an informationally rich context such as Wall Street, the quickest route is to do so is by providing an original interpretation, namely, a new calculative frame. The case of Blodget illustrates this mechanism: Blodget rose from obscurity to top Internet analyst in 2000 precisely thanks to the mould-breaking frame he developed in December 1998. In short, the notion of frame-making emphasizes the strong incentives that securities analysts have to produce original work.

In a related line of argument, frame-making qualifies the critics approach to analysts as passive classifiers. Whereas existing work on critics emphasize the tendency of critics to seek legitimacy and reproduce the existing social and cognitive structure (Zuckerman 1999; Hsu and Podolny 2005), the notion of frame-making highlights the need for analysts to challenge existing structures. Only by doing so can analysts uncover opportunities for investors. These challenges take the form of recombinations of the existing structure. For example, Blodget claimed that Amazon constituted a new type of company, endowed with generous profitability of Dell Computers and the outsized growth prospects of a start-up firm, and labelled this category the "Internet company." Thus, whereas the critics literature has so far

emphasized the conservative facet of critics' work, the notion of frame-making emphasizes their entrepreneurial one.

How do calculative frames operate?

The second episode in the Amazon controversy provides a compelling illustration of calculative frames at work. In May 1999, Blodget and Abelson interpreted the announcement of larger-than-expected annual losses at Amazon in sharply different ways: whereas the former saw them as a signal to sell the stock, the latter viewed them as a reason to buy. The episode underscores that information per se does not convey economic meaning; it needs to be interpreted. It also shows that the frame espoused by an analyst shapes how he or she interprets it, to the point that analysts can reframe disconfirming evidence as confirmatory. As a result, sustained divergences in valuation emerge in which opposite calculative frames coexist. We refer to these as framing controversies.

The notion of framing controversies departs from the neoclassic view of Bayesian information processing. According to the latter, there is a single correct way to assemble existing information on company value, and the role of analysts is reduced to locating this information. Even if two analysts disagree at some point, the argument goes, their disparity will quickly disappear because rational analysts update their beliefs in the same direction. The notion of frame-making takes issue with this idea, positing that in contexts of Knightian uncertainty, several alternative and equally plausible ways of assembling information co-exist. Furthermore, these are given by the frames espoused by the different analysts. Indeed, the differences in valuation between Blodget and other Amazon analysts presented in the first episode did not narrow by May 1999 despite the presence of more information. The notion of framing controversy seeks to captures this persistence in divergent positions.

Framing controversies also deviate from the behavioral tenet that failed predictions bring irrationality to the capital markets. The behavioral finance literature presents mispredictions by analysts as "biases" that is, as mistakes that hamper the efficient functioning of the market. By contrast, the notion of framing controversies suggests that divergent predictions in fact contribute to market efficiency. Frames guide investors in interpreting incoming information, stabilizing the meaning of news across the

investor community and over time. In addition, controversies over frames underscore legitimate differences in perspectives, allowing investors to better locate their own position in ongoing debates (e.g., what Brenner [1991: 24] referred to as "an articulate case from both the bull and the bear"). Furthermore, the coherence of the categories, analogies and key metrics chosen by the analysts comes across as rational, at least according to the classic definition provided by Savage (1954) – that is, as internally consistent. In sum, the concept of framing controversies suggests that analysts bring about collective rationality to the capital markets, even if their individual predictions appear to be biased.

How are frames abandoned?

The third episode in the Amazon controversy reveals why and when analysts might abandon a frame they espouse. On June 2000, analyst Ravi Suria issued a highly critical report on Amazon.com. Despite Blodget's counter-report, fellow analysts responded to Suria by discarding their optimism about Amazon, lowering their recommendations and price targets. What made those analysts abandon a frame that they previously espoused? In answering this question, we note that the context was different in June 2000 from May 1999, given the persistent unprofitability of Amazon. This difference suggests an additional theoretical concept, asynchronous confrontation.

The notion of asynchronous confrontation supports the neoclassic idea that external economic realities matter. In effect, the analysts examined in the July 2000 episode appeared to be using economic data to assess the value of Amazon, as the information processing view would suggest. However, this confrontation is non-contemporaneous with the arrival of the relevant data: the information mobilized by Suria in June 2000 was available to analysts and investors much at a much earlier date. This is consistent with the finding reported by Zuckerman and Rao's (2004) that investors in Internet companies did not value stocks in an irrational, purely categorical manner, but appeared instead to be discriminating.

Asynchronous confrontation also adds to the sociological literature on frame analysis by introducing time as an explanatory variable. One of the major criticisms leveraged at Goffman's frame analysis is its inability to explain how actors switch frames. The notion of asynchronous confrontation accounts for the presence of time in the frames offered by analysts. Once time has elapsed, analysts have

to modify their frames based on the feedback that they receive. If they do not, as in the case with Blodget, there is a severe legitimacy price to be paid.

Finally, frame-making extends the literature on conflicts of interest by accounting for an additional source of rigidity in analysts' assessments. Frame-making creates internal pressures on top of those created by the social relations surrounding the analyst. Indeed, the frames espoused by an analyst quickly become his or her public face and signal commitment to a stock. Blodget, for instance, was quickly identified as the "Amazon bull." Such commitment reduces an analyst's flexibility, as an analyst who framed a stock differently every month – proclaiming it to be a bookseller in January, an Internet company in February and an e-commerce portal in March – would rapidly diminish his or her own credibility. As a result, highly visible frame-makers quickly encounter pressures to stick to their frame, a behaviour is consistent with the well-documented phenomenon of escalation of commitment (Staw 1981). By proposing a new source of rigidity, the notion of calculative frames warns us against attributing every instance of undue persistence to an external conflict of interest.

The frame-making perspective also informs the regulatory debate about conflicts of interest. The regulatory and academic debate on the matter has so far conflated the notions of independence, accuracy and objectivity. For instance, some proposals have called for public scrutiny of analysts' independence by performing regular checks on the accuracy of their predictions (Spitzer 2004). While concurring with the need for analyst independence, our approach departs from the aforementioned discourse by suggesting that in contexts of uncertainty there is no single best way to value a stock: every analyst evaluates his or her data with the use of a frame. Similarly, inaccuracy does not necessarily imply a conflicted bias, but may instead be the result of using a frame that was in the end not adopted by investors. From a frame-making perspective, insisting on accuracy on the part of analysts would have the unfortunate result of forcing them to conform to the prevailing frame, hampering the emergence of framing controversies and reducing the diversity of the pool of available frames that investors can draw from.

Instead, the concept of frame-making advocates a conceptual separation of the notions of independence, accuracy and objectivity. In place of using objectivity or accuracy as a proxy for

independence, we propose the notion of subjective independence as a conceptual goal for regulators. The concept denotes a situation in which analysts are free from conflicts – and free also to depart from the consensus. Subjective independence holds diversity in calculative frames, rather than predictive accuracy, as the central regulatory goal to be reached.

CONCLUSION

Our objective in this paper was to clarify the intermediary function performed by security analysts in contexts of Knightian uncertainty. In doing so, we seek to contribute to two important debates in economic sociology as the discipline grows beyond the study of social networks and the nature of business organizations. The first question concerns the nature of intermediation in impersonal, disembedded mass markets: if transactions are not mixed up with social relations, how are these markets social in nature? The second question addresses the ways in which contemporary economies are shaped by the current prevalence of the capital markets: how are resources allocated in an economy marked by financial, rather than bureaucratic, capitalism?

The core finding emerging from our study is that security analysts confront Knightian uncertainty by becoming frame-makers. In the presence of uncertainty, analysts make up for their partial knowledge of the world by becoming active builders of interpretive devices that bracket, give meaning and let investors transform their information into a single, clear-cut, quantitative measure of value. We refer to these as calculative frames. These frames include categorizations, analogies and the selection of key dimensions of merit. In contexts extreme uncertainty, we propose, the primary activity undertaken by securities analysts is not forecasting prices or providing investment advice, but developing calculative frames.

The notion of frame-making extends our sociological understanding of disembedded, mass-market intermediation. An emerging literature has presented contemporary intermediation as critique – that is, assessment of value under uncertainty – and emphasized its social nature by pointing to the critics' tendency to perpetuate the prevailing social and cognitive order. The notion of frame-making contributes to this literature by pointing to two distinct characteristics of financial critique. First, competition among

critics means that they are not only passive enforcers of the dominant structure, but also their most active challengers. Indeed, frame-makers gain professional status by identifying discrepancies between critical schemes and the economic activity that they seek to capture. Second, calculative frames expand the notion of critical scheme by including the role of analogies and choices of key metrics.

The present study also extends our sociological understanding of contemporary capitalism by inquiring into the dynamics of valuation engendered within the capital markets. As noted, valuation takes place in the context of framing controversies among rival frame-makers. Ongoing competition for status among analysts motivates them to differentiate themselves by offering novel and original frames. Controversies ensue over the resulting menu of frames, but these are only fully resolved once events unfold and the uncertainty is resolved. The asynchronic nature of this settlement mechanism implies that the prevailing calculative frame can remain misaligned with the frame eventually espoused by investors for a substantial period of time. Further study of the social dynamics that shape these controversies can shed important light on the social determinants of worth in the capital markets.

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Table 1: Industry knowledge and written reports make analysts valuable

Institutional Investors' rank of desirable analyst attributes by U.S. equity assets under management, 2001. Source: *(*Institutional Investor 2001: 179).

Rank	Attributes	$75 b. or more	$30 to $75 b.	$10 to $29 b.	$5 to $10 b.	$1 to $4.9 b.	Below $1 b
1	Industry knowledge	1	1	1	1	1	1
2	Written reports	3	2	3	3	3	2
3	Special services *	2	3	2	5	5	5
4	Servicing	4	2	4	2	6	6
5	Stock selection	6	5	5	4	2	3
6	Earnings estimates	5	6	6	6	4	4
7	Quality of sales force	7	7	7	7	7	7
8	Market making/ execution	8	8	8	8	8	8

* Company visits, conferences, etc.

Table 2: **The rise and fall of Henry Blodget**

Institutional Investors' All-America Research Team in the Internet, New Media and E-Commerce category, 1998-2001. Source: *Institutional Investor* (2002).

Rank	1998	1999	2000	2001
First	Mary Meeker (Morgan Stanley)	Mary Meeker (Morgan Stanley)	**Henry Blodget** (Merrill Lynch)	Holly Becker (Lehman Brothers)
Second	Jamie Kiggen (DLJ)	Jamie Kiggen (DLJ)	Mary Meeker (Morgan Stanley)	Anthony Noto (Goldman Sachs)
Third	Michael Parekh (Goldman Sachs)	**Henry Blodget** (Merrill Lynch)	Jamie Kiggen (DLJ)	**Henry Blodget** (Merrill Lynch)
Runner-up	Keith Benjamin (Banc Boston)	Keith Benjamin (Banc Boston)	Jamie Kiggen (CSFB)	
Runner-up	Alan Braverman (Deutsche Bank)	Michael Parekh (Goldman Sachs)	Charles Baker (Smith Barney)	
Runner-up	Jonathan Cohen (Merrill Lynch)			

Table 3: The elements of a calculative frame, September-December 1998.

Categories, analogies and key metrics used by Blodget and Cohen in September-December 1998. Source: Blodget and Erdmann (1998) and (Cohen and Pankopf, 1998).

CATEGORIES	
Blodget: Amazon as an Internet firm	**Cohen: Amazon as a bookseller**
"[Amazon is] not a book retailer; electronic customer-services company."	"Bookselling is an inherently competitive and low-margin business."
"We believe that online retailing has very high barriers to entry (…) merchant-customer relationships on the web, once established, are much stronger than those in the physical world."	"Because the IP value continued in published works typically represents only a small portion of the price to end-users, we do not expect that moving that business to an online environment will meaningfully change those characteristics."
"Selling stuff online is a heck of a lot more difficult than it looks and that having a strong brand in the physical world means next to nothing when it comes to building a business on the web."	"Amazon believes that the four most important parameters are selection, convenience, price and service. We believe that with the exception of service, those factors could be seen as subject to rapid commoditization."
"Online retailing is a scale business and right now Amazon.com is the only online retailer with scale."	

ANALOGIES	
Blodget: Amazon like Dell	**Cohen: Amazon like Barnes and Noble**
"We compared three business models and concluded that Amazon.com's business model more closely resembles the direct sales model of Dell than it does land based retailer B&N or vast wholesale distributor Ingram Micro's."	"This [selling books online] is not like Microsoft where I sell an extra 100,000 copies of Windows 95 and my cost of goods is zero. This is not like Yahoo! where the feeding frenzy allows me to triple my rates for search engine space which all drops t the bottom line."
"The recent performance of Amazon.com and B&N.com suggests that Amazon.com is crushing B&N.com."	"B&N, as the largest bookseller in the world (and a leading direct mail competitor) has the ability to maintain a cost-based advantage over Internet-specific competitors."
	"B&N and Borders simply represent stronger brands."

METRICS	
Blodget: focus on revenues	**Cohen: focus on profits/losses**
"[Amazon.com's] management goes out of its way to point out that historical rates of revenue growth – more than 30 % per sequential quarter since inception – are not sustainable, but it is interesting to note what would happen if they were; in March 2000, Amazon.com would become the largest book and music retailer in the world."	"[That] the equity market continues to focus primarily on revenue generation in establishing the company's valuation (…) is not something on which we would necessarily rely."
	"We believe that Amazon.com deserves to be evaluated and valued principally on the basis of its retail opportunities."
	"It is probably premature to apply an Internet portal-based valuation construct to Amazon.com's shares."

Table 4: Framing controversies in May-June 1999

The categories, analogies and key metrics used by Blodget and Abelson in May 1999. Source: Blodget (1999) and Abelson (1999). The table shows that two analysts with the same data and different frames arrive to disparate conclusions.

CATEGORIES

Henry Blodget: Amazon as an Internet firm	Abel Abelson: Amazon as an Internet bookseller
"[The claim that Amazon is a brick-and-mortar company] is true, but it is not a surprise, and it is not necessarily a negative. Orders have to be fulfilled, and if Amazon.com can control the level of service and the points of margin associated with the fulfillment as opposed to giving them to a third-party distributor, all the better for its customers, and its shareholders."	"Amazon.com is buying up more bricks and mortar distribution centers, so it is beginning to look more and more like a traditional retailer."

ANALOGIES

Henry Blodget: Amazon as Dell	Abel Abelson: Amazon as Wal-Mart
"Amazon.com is indeed a middleman, but in industries in which middlemen are valuable—such as retailing—the best ones can be worth a lot, even if they have skimpy margins (…) We continue to believe that there are important differences between Dell selling direct in the computer industry and publishers or authors selling direct in the book or music industries—differences that we believe favor the existence of middlemen in the latter industries."	"Amazon.com is just another middleman, and increasing competition from authors and publishers selling direct, other booksellers, and Wal-Mart will soon render it less attractive."

KEY METRICS

Henry Blodget: focus on future revenues	Abel Abelson: focus on current revenues
"Amazon.com's 'pro forma' results (pre-merger-related expenses) are irrelevant."	"Barnes & Noble's stock sells for a tad over 80% of revenues. Amazon's stock sells for a tad over 33 times revenues. Something's out of whack"

CONCLUSION

Henry Blodget: buy	Abel Abelson: sell
"AMZN is a core holding for two basic reasons: 1) we believe that online retailing will be big enough that the leaders, including Amazon.com, will ultimately grow into their valuations, and 2) we believe that Amazon.com has one of the smartest and most disciplined management teams in the industry.	"Amazon.com isn't profitable now—so it probably will never be worth much of anything." "Will Amazon ever make money? We were – and are – doubtful."

Table 5: Two solid frames, June -July 2000

The categories, analogies and key metrics used by Blodget and Suria in June-July 2000. Source: Blodget and Good (2000) and Suria (2000).

CATEGORIES

Henry Blodget: Amazon as an Internet firm	Ravi Suria: Amazon as a retailer
"AMZN has been very weak recently as a result of poor sentiment surrounding the ecommerce sector and concern about its cash burn and revenue growth."	"The company is displaying the operational and cash flow characteristics of a normal retailer, despite its 'virtual' pedigree. (…) The company's inability to make hard cash per unit sold is clearly manifested in the weak balance sheet, poor working capital management and massive negative operating cash flow -- the financial characteristics that have driven innumerable retailers to disaster throughout history."

ANALOGIES

Henry Blodget: Amazon like AOL	Ravi Suria: Amazon like Best Buy, Musicland…
"On a macro level, we find it interesting to note the many similarities between Amazon today and AOL in 1996 -- long before the latter company became the profitable, blue chip internet play it is today."	"We compare various balance sheet, cash flow, and working capital characteristics of Amazon to a number of the real world retailers, which spans across the company's product lines. The companies that we chose include a broad array of firms such as Best Buy, Musicland, Barnes & Noble, Borders, and Books A Million."

METRICS

Henry Blodget: focus on depressed stock price	Ravi Suria: focus on cash flow
"We remain comfortable with Amazon's cash position." "We believe Amazon shares many of the characteristics that made AOL worth the risk even in its darkest hours; a big opportunity, strong management, an improving financial model, and a battered, controversial stock."	"Amazon has essentially funded its revenues through a variety of sources over the past year. From 1997 through the last quarter, the company has received $2.8 billion in funding (…) - a whopping $0.95 for every dollar of merchandise sold." "In its current situation of high debt load, high interest costs, spiraling inventory and rising expansion costs, we believe that current cash balances will last the company through the first quarter of 2001 under the best-case scenario."

CONCLUSION

Henry Blodget: buy	Ravi Suria: sell
"Although AMZN will likely remain volatile throughout the summer, we believe that the current weakness provides a particularly good entry opportunity for long-term investors."	"Going into what is arguably its most challenging holiday season, we believe that that the combination of negative cash flow, poor working capital management and high debt load in a hyper-competitive environment will put the company under extremely high risk"

Figure 1: Theoretical sampling over Blodget's reports

The figure shows the number and length of Blodget's reports during 1998-2000, as well as the reports that our theoretical sampling design pointed to.

(1) We started with the question, "What is the meaning of analysis under uncertainty?" Our search for a quality analysis took us to Blodget and the piece that made him famous, his December 1998 report. We developed the notion of calculative frames by comparing it with Cohen's report.

(2) Our next question was, "how do calculative frames shape valuation?" This led us to Blodget and Abelson's report in May 1999, when their frames shaped how each gave meaning to incoming information. We concluded that frames shape interpretation and lead to framing controversies.

(3) Finally, we asked, "how long do these controversies last?" and turned to the reports of Blodget and Suria in June 2000, in which investors abandoned Blodget's frame and espoused Suria's instead.
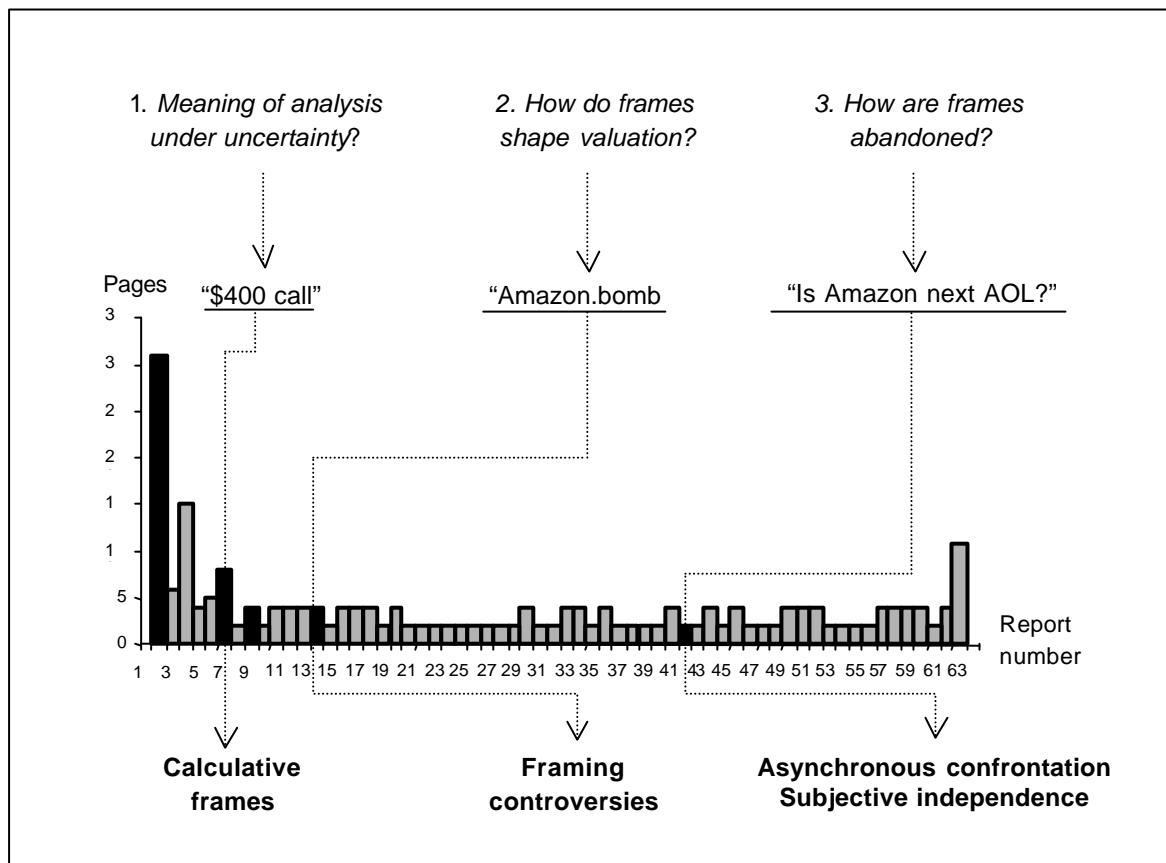
Figure 2: Divergent revenue estimates.
The 1998 revenue estimates for Amazon.com issued by Henry Blodget and Jonathan Cohen for the period 1999-2000 were sharply different. *Source*: Blodget and Erdmann (1998) and Cohen (1998a).
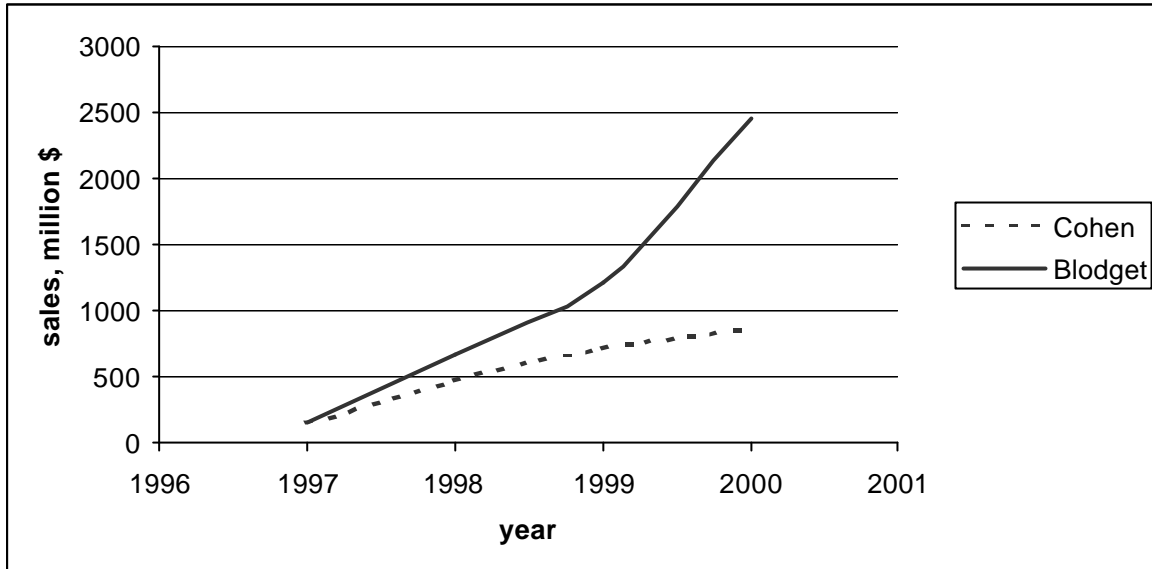

Figure 3: Blodget and Cohen's calculative frames for Amazon.com
Blodget's calculative frame included a choice of category, analogy and key metric to value Amazon.com. Cohen's frame included the same elements, but of different content. Source: Blodget and Erdmann (1998) and (Cohen and Pankopf, 1998).
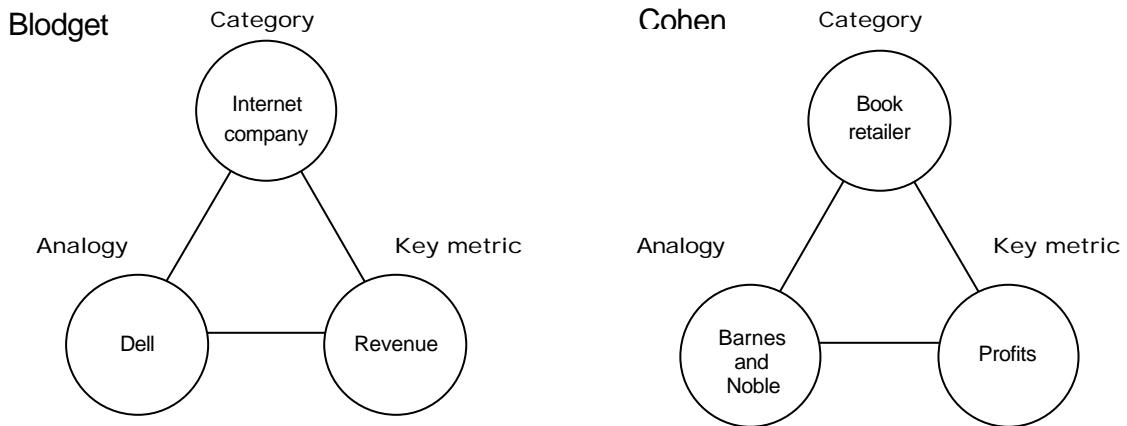
Figure 4: Blodget and Abelson's calculative frames for Amazon.com

Both frames included a choice of category, analogy and key metric to value Amazon.com, but of different content. Blodget (1999) and Abelson (1999).
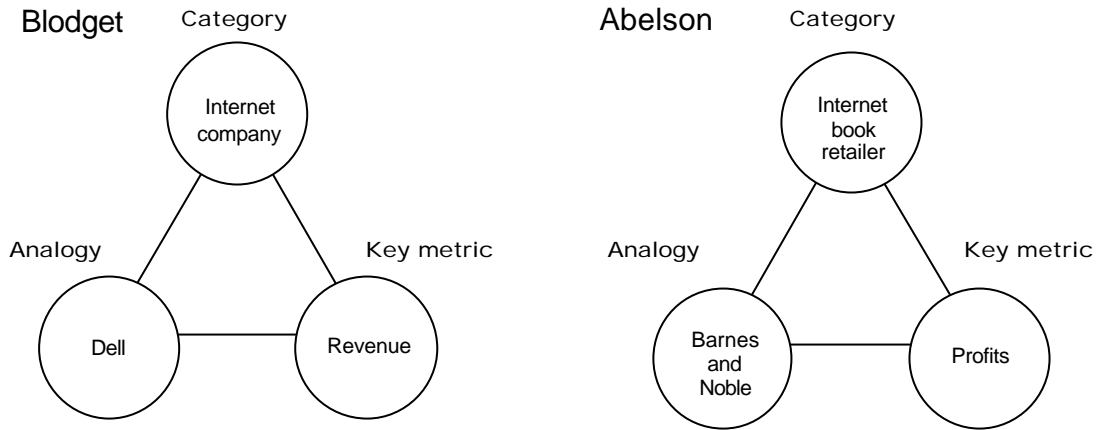

Figure 5: Blodget and Suria's calculative frames for Amazon.com.

Source: Suria and Oh (2000), Blodget (2000a).