

BELIEVING IN FIRST MOVER ADVANTAGE

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Abstract

This research investigates the origin of first-mover beliefs, arguing that the success of the idea of first mover advantage in the social marketplace of ideas is rooted in cultural beliefs and personal experience that favor “first-ness”. Beliefs in first mover advantage dominate the mainstream media despite mixed evidence in the academic literature (study 1A), and exposure to the business press is associated with increased belief in first mover advantage (study 1B). Indeed, first mover beliefs appear rooted in culture: first mover beliefs are enhanced by priming American culture (study 2A) and are more favorable among American versus Chinese respondents (study 2B). Subsequent experimental work confirms that even naïve subjects exhibit spontaneous beliefs in first mover advantage. Such spontaneous beliefs are as strong as beliefs reported after considering self-generated or presented exemplars favoring moving first (studies 3A and 3B), and exemplar-driven judgment produces stronger beliefs in first mover advantage than analytic reasoning (study 4). Moreover, such beliefs tend to persevere: first mover beliefs are neutralized but not reversed by considering exemplars of the disadvantages of moving first (studies 3A, 3B, and 4). In addition, providing contradictory evidence or labeling the opposing “rapid responder” counter-belief proved insufficient to overcome spontaneous beliefs in the advantages of moving first (study 5). Finally, the findings for personal and analogical experience also held for a professional sample with business experience (study 6). Taken together, these studies suggest that beliefs in first mover advantage are “sticky” and difficult to overcome, rooted as they are in personal experience and the cultural environment.

Keywords: first mover advantage, pioneering advantage, managerial judgment and decision making

“Belief in a pioneering advantage permeates all walks of life. People on Main Street believe it. Analysts on Wall Street believe it. Reporters use it to explain market performance. Researchers develop elaborate studies to validate it. This thesis is strongly supported by academics and practitioners, amateurs and professionals. It is a thesis that has endured through the decades.” (Tellis and Golder, 2001, p. 3)

The goal of this research is to investigate why the idea of first mover advantage has been so successful in the social marketplace of ideas. Boulding and Christen (2003) note that managers frequently take costly actions based on their belief that “being first” in a new market is valuable: “‘First mover advantage’ is... often high on managers’ list of arguments to justify strategic moves such as the entry into emerging markets such as China or the recent rush into e-business.” (p. 371). This belief is widespread though it differs by culture and industry: a survey of manufacturing and service managers in nine different Western and Asian countries showed overall beliefs in the advantages of being first which were reduced but not eliminated in Asian countries and among service industries (Song, DiBenedetto, and Zhao 1999, p. 820). But evidence from the academic research literature (to be reviewed later) suggests that the idea of an overall first mover “advantage” is, at best, questionable. First movers face advantages and disadvantages and it is not clear at present whether moving first provides an overall advantage. As a result, we are faced with a puzzle: Why does a concept that has produced so much debate in the research literature find such ready purchase in the social marketplace of ideas?

Song et al. (1999) point out the need to better understand the “mental models” that drive beliefs in first mover advantage. The present research proposes that “first mover advantage” is prevalent because it is readily compatible with the other beliefs that individuals bring in from their cultural environment and personal experience. Bolton (2003) demonstrated that initial beliefs based on nonanalytic thinking (e.g., scenario generation or reasoning by analogy) are more likely to persevere than initial beliefs based on analytic reasoning. The idea that moving first is an advantage may find ready resonance for people because their cultural experiences provide them with many analogies and scenarios where being first is advantageous. We like to be first in line, to choose first, to finish first; we know that “first is foremost”, “first come is first served”, and “the early bird gets the worm.” We

celebrate those who are first—in invention, in exploration, in the arts, in sports. Anything else is second-hand, second-drawer, or second rate.¹

The present research is structured as follows. Before exploring the nature of first mover beliefs, the academic literature on first mover advantage is reviewed and indicates that it has historically been mixed in pointing out advantages and disadvantages of moving first. In comparison, studies 1A and 1B investigate the cultural environment by analyzing attention to first movers in the popular, business and academic press and the effects of media exposure on managerial beliefs. Study 2A then experimentally tests the influence of culture on first mover beliefs, and study 2B follows up with a cross-cultural sample. Arguing that one’s cultural environment provides people with exemplars where moving first is an advantage, studies 3A and 3B investigate the effects of personal and analogical experience on naïve first mover beliefs, and study 4 compares the impact of such experience to that of analytic reasoning. In addition, the perseverance of beliefs in first mover advantage are tested against corrective procedures designed to reverse such beliefs in studies 3A, 3B, and 4 and against opposing strategic beliefs such as rapid responder advantage in study 5. Finally, study 6 examines the impact of personal and analogical experience with a professional sample. Taken together, these studies shed light on the origin and perseverance of beliefs in first mover advantage.

PREVIOUS RESEARCH ON FIRST MOVERS

Early empirical research in small scale studies of a few industries found that first movers had larger long-run market share (Bond and Lean 1977; Whitten 1979), and ensuing research generalized these effects across other industries (Robinson and Fornell 1985; Urban et al. 1986). Follow-up research, however, suggested that the results on market share might not be echoed in terms of profits (Boulding and Moore 1987; Srinivasan 1988). In one of the first reviews of the area, Lieberman and Montgomery

¹ Tellis and Golder (2001) speculate that first mover beliefs derive their “greatest support from the public’s simple adherence to the principle of the rights of first movers” (p. 4). The present research argues that first mover beliefs are not rooted in their right-ness but rather in their association with positive outcomes (right or not).

(1988) summarized the literature thus far: “One of the first lessons of the first mover literature is that pioneering carries both advantages and disadvantages. The net impact may well be negative” (p. 53-54).

Subsequent researchers raised substantial questions about what weight to place on early empirical results. Golder and Tellis (1993) noted that previous research had used databases that might mistakenly classify early market leaders as first movers when in fact the market pioneer had failed and vanished.² Their analysis showed that true market pioneers failed to survive about half the time, and that early market leaders tended to enter almost 13 years after pioneers and to survive better in the long term. Moreover, researchers also recognized that existing empirical results did not control for the fact that different firms have different capabilities and that moving first might not provide an advantage for all firms, only those whose capabilities (e.g., in R&D) were appropriate for pursuing this strategy (Boulding and Moore 1987; Moore et al. 1991; Lieberman and Montgomery 1988; Robinson et al. 1992; Boulding and Christen 2003). Robinson et al (1992) showed that pioneers and followers differ systematically in their skills and resources: good marketers tend to enter later, while companies with strong finance skills and intensive R&D spending are more likely to pioneer. Finally, others noted that most empirical results neglected to consider important dimensions like profitability, instead concentrating primarily on market share or revenues (Lieberman and Montgomery 1988, 1998; Kerin et al. 1992; Robinson et al. 1992; VanderWerf and Mahon 1997).

Indeed, literature reviews have generally expressed some schizophrenia about the overall “advantages” of moving first. In addition to the mixed conclusion of Lieberman and Montgomery

² Interestingly, Golder and Tellis (1993) note that informants frequently mis-identify later entrants as pioneers—perhaps assuming that the dominant firm must have been the first mover in the market, consistent with a cultural bias favoring first-ness. Such an inference may also prevail outside business: for example, Christopher Columbus is celebrated by a federal holiday, 2 state capitals, the Chicago World’s Fair, a transcontinental highway, numerous monuments, and even several poems—and his commemorative success may in part lead people to credit the explorer with the discovery of the New World (Schuman et al. 2005). Indeed, from a traditional American cultural viewpoint, Columbus represents (ironically) yet another example of how success and first-ness go together.

(1988), Kerin et al. (1992) concluded that the “belief that entry order automatically endows first movers with immutable competitive advantages... is naïve in light of conceptual and empirical evidence”. Although Golder and Tellis (1993) conceded that existing evidence “overwhelmingly supports the advantages of pioneering”, limitations in existing databases led them to question whether a pioneering advantage was “Marketing Logic or Marketing Legend.” Subsequently, Kalyanaram, Robinson, and Urban (1995) proposed that for “mature consumer and industrial goods, [surviving] market pioneers have sustainable market share advantages over later entrants” (p. G214). However, after meta-analyzing 22 different studies, VanderWerf and Mahon (1997) conclude that first mover advantage is true of only “a bounded set of performance types, industries, and entrant types”.

To summarize the literature, albeit subject to dispute given the mixed evidence, one might conjecture that first movers experience some long-run advantage in market share (Carpenter and Nakamoto 1988; VanderWerf and Mahon 1997), but not necessarily on profits (Lieberman and Montgomery 1988, 1998; Kerin et al. 1992; VanderWerf and Mahon 1997; Boulding and Christen 2003). Indeed, after carefully controlling for endogenous capabilities, Boulding and Christen (2003) show that there is a market share / demand side advantage to moving first, but there is also a greater cost *dis*advantage. Combined, their results suggest that on average first movers face a “long-term profit disadvantage relative to later entrants” (p. 385), although this average disadvantage can be reversed by favorable industry conditions (e.g., limited possibilities for consumer learning or patent protection). In sum, although first movers face some advantages in particular industries, the academic research remains mixed and does not support an overall first mover advantage.

This academic debate lies in contrast to anecdotal and survey evidence (Tellis and Golder 2001; Song et al. 1999) of managerial beliefs in first mover advantage. This paradox begs the question: Why do managers believe in first mover advantage? In the series of studies that follow, the origin and perseverance of first mover beliefs are investigated. A variety of evidence is presented to argue that first

mover beliefs are rooted in personal and cultural experience that provides people with exemplars favoring first-ness. The research begins by examining the cultural environment before turning its focus to analogical experience.

STUDY 1A: MEDIA ANALYSIS

One advantage of studying the notion of first mover advantage in the marketplace of ideas is that its distinctive terminology—“first mover”, “pioneering advantage”—makes it easy to trace. In this study, the relative prevalence of these terms in academic journals and the popular press (top mainstream U.S. newspapers and business press) is examined. The mainstream media provides a reasonable proxy for what ideas win out socially and dominate the cultural environment. Of particular interest is whether the mainstream media places more emphasis on the idea of “advantage” in first mover advantage than the scholarly researchers who have studied the idea systematically. Such a finding would indicate that first mover beliefs have succeeded and are firmly embedded in popular culture, as hypothesized in the present research.

Method

Two databases for both mainstream media and academic press were compared as follows:

Mainstream media: A search of the mainstream media was conducted using Dow Jones’ Factiva, a searchable database of over 8,000 publications (e.g., newspapers, magazines, TV transcripts, newswires) that allows for full text searches. To analyze the *business press*, a standard Factiva source list entitled “Major news and business publications: US” was used, selecting the publications that focus on business rather than general news (specifically: Barron’s, Business Week, Forbes, Fortune, and the Wall Street Journal). To analyze *mainstream newspapers*, a standard Factiva option that searches the Top 50 U.S. newspapers by circulation (omitting WSJ to avoid overlap for comparison purposes) was used.

Academic press: Two databases were analyzed for the academic press. First, the “business” and

“economics” databases of *JSTOR*, which combined carry 58 academic journals, was searched. Second, the “business” database within *ABI Inform*, limiting the search to “scholarly journals”, was used. (*ABI Inform* indexes 2357 publications, about 10-20% of which are scholarly. While *JSTOR* does not index most marketing journals, *ABI Inform* does.) *ABI Inform* searches the title and abstract of these journal articles so it is limited relative to *JSTOR*, which allows full-text search of journal articles.

All publications were searched for the period from 1985-2002. The earliest search year was determined by the coverage of *Factiva* (which is sparse before 1985) and the latest search year was determined by coverage of the two academic databases (which exclude coverage of the most recent journals in a moving window). *ABI Inform* tends to exclude the most recent year while *JSTOR* excludes the most recent 3 or 5 years. The overall pattern of results between popular and academic press is similar if other cuts of the databases are made. The overall number of articles in each database was estimated by searching for a common word (e.g., “the”).

Results

Table 1 compares the four databases in terms of their focus on first and second movers, and on the association of the word “advantage” with moving first, second, or pioneering.³ (The word “pioneer” or “pioneering” alone was not included in the search because most uses of those words do not concern order of entry into business markets.) Unsurprisingly, the academic press is more likely to be concerned with “first movers” than the Top 50 newspapers: the concept appears in 5062 articles per million in *JSTOR* but only 9.5 articles per million in top newspapers, with the business press falling in between. More importantly, it is clear that both the mainstream and academic press favor conversations about “first movers”—in all cases the ratio of first mover to second mover articles exceeds 16:1.

³ Because the present research is interested in the application of the first mover concept to real decisions, articles that mentioned the word “game” were excluded. Game theorists often use the words “first mover” to describe the order of interactions in abstract games and it seemed misleading to include these articles in the current analysis that is concerned with applied circumstances of entry into real markets. However, the qualitative results remain similar if these articles are included.

Mainstream media and academic press differ primarily on two dimensions. First and most importantly, the “first mover” phrase is significantly more likely to be associated with the word “advantage” in popular and business press ($\chi^2 > 16.1, p's < .001$): 61% of articles in top business publications and 67% of top 50 newspapers mention that first movers have an “advantage” compared with 25% and 31% of articles on ABI Inform and JSTOR. Second, the phrase “pioneering advantage” (used in much of the original academic literature) did not make the transition to the popular press: mentions of pioneer advantage are much more common in academic journals ($\chi^2 > 25.7, p's < .001$). .

Also of interest is the rate of diffusion of the first mover concept in the mainstream media. The first mover concept, first discussed in the academic literature in the 1980s, remained relatively uncommon even in the business press before 1995 but has increased rapidly in popularity since then in both popular business press and top newspapers (see table 2).⁴ For example, first mover has increased at a compound rate of 23.1% per year in top newspapers. To help put this rate in perspective, consider elements of pop culture that become more prevalent over a similar period: mentions of *Madonna* increase at 1.3% per year and *rap* at 4.2%.

As an additional way of contextualizing the numbers in tables 1 and 2, top business publications were searched for a variety of other concepts in business and strategy (see figure 1). By the most recent time period (2000-2002), the first mover idea appears more frequently than the resource based view, transactions cost, marginal costs, or core competence.

Insert tables 1 and 2 and figure 1 about here.

To summarize: In the mainstream (versus academic) media, first movers are more likely to be associated with the idea of “first mover advantage.” This label has appeared increasingly in the business

⁴ Note that although the idea of first mover was prominent in the dot-com boom, its popularity continued to increase even after the crash that began in March 2000.

press and top 50 newspapers at a rate that dwarfed other concepts in popular culture and placed it more firmly in mainstream discourse than other key business strategy concepts.

STUDY 1B: MEDIA AND FIRST MOVER BELIEFS

The media analysis in study 1A demonstrates that the idea of first mover advantage gained increasing traction in mainstream culture. It seems plausible that this success in the marketplace of ideas affects the beliefs of managers; at the very least, prior research has shown that mere repeated exposure to a stimulus can make us feel more positively toward it (Zajonc 1968). Moreover, familiar ideas may not only be regarded more warmly, they may also be regarded as true. Research shows that merely being exposed to a statement repeatedly, without any additional evidence or elaboration, is sufficient to make people believe more in the statement (Arkes, Hackett, and Boehm 1989; Hasher, Goldstein, and Toppino 1977; Hawkins and Hoch 1992). Moreover, belief in a statement may even increase when a statement is repeated to explicitly debunk it (Skurnik et al., 2005).⁵ Once established, the dominance of first mover advantage beliefs in the mainstream media may contribute to the perseverance of managerial beliefs. In the present study, a survey of managers was conducted to examine the relationship between first mover beliefs and media exposure.

Method

As part of an electronic “Forbes.com Work Style Survey”, respondents were asked a series of questions regarding their managerial beliefs (including first mover advantage) and work habits (including media exposure). First mover advantage was measured on a seven-point scale anchored by “strongly disagree/strongly agree”: “When organizations enter new markets, the first mover has a significant advantage over followers.” Media exposure was measured by asking respondents whether

⁵ It is possible that mentions of “first mover advantage” in the media, despite the inclusion of the term *advantage*, could reflect attempts to question the concept or debunk it. Skurnik’s research suggests that such attempts might backfire (indeed the results he documents might be even stronger for a phrase that contains an explicit endorsement such as first mover advantage). In any case, the managerial survey in study 1B shows that managers who actively read the mainstream business press are more likely to endorse the concept of first mover advantage.

they read the following business magazines: Barron's, Business Week, Financial Times, Forbes, Fortune, Harvard Business Review, Inc., and the Wall Street Journal. Respondents also provided background employment and demographic information.

Results

Completed responses were obtained from 4,819 individuals at least 18 years old, employed full-time, and holding managerial or executive positions. (In the sample, 47.1% of respondents were president/CEOs, 8.7% held C-level positions, 20% were senior management, and 24.2% were other managers. The median age range was 45-54 and the median household income was \$100,000-149,000.) As expected, analysis revealed an overall favorable belief in first mover advantage ($M = 4.71$ (1.73); t -test comparison to scale midpoint, $p < .05$). In addition, increasing media exposure (i.e., the number of business magazines read) was associated with more favorable beliefs in first mover advantage ($F(1,4785) = 14.02$, $p < .01$). This correlational evidence suggests that reading the business press may reinforce belief in the strategic advantage of moving first—and is consistent with a cultural bias, reflected in the media, favoring first-ness.⁶

STUDY 2A: CULTURE AND FIRST MOVER BELIEFS

Studies 1A and 1B suggest that first mover advantage has been quite successful in the social marketplace of ideas and that mainstream media may serve to reinforce manager's beliefs. But this observation merely moves the puzzle back one stage: Why did beliefs in first mover diffuse so rapidly? The present research argues that Western, and particularly American, culture celebrates being first and doesn't spend much time lauding those who come in second. If so, then managers may be particularly

⁶ Interestingly, the predisposition to focus on first mover advantage may not be limited to managers. Consistent with the content analysis of the academic press, Lieberman and Montgomery (1998) note that most first mover research has studied first mover *advantages* (rather than first mover disadvantages or the advantages of followers). In their review a decade earlier, these authors noted that theoretical models of first mover advantages were “far ahead” of theoretical models of later-mover advantages (Lieberman and Montgomery 1988, p. 52). Thus, the intellectual development of the field in academia may show a first mover advantage for first mover advantage in the academic marketplace of ideas.

receptive when introduced to the concept of first mover advantage because it resonates with broader cultural schema. Such cultural beliefs are easily generalized across domains and thus, even people naïve to the business literature are hypothesized to exhibit spontaneous beliefs favoring the first mover in a business context.

In addition, prior research suggests that first mover advantage beliefs may be stronger in Western than Asian countries (Song et al. 1999). Indeed, research by Hofstede (1994, 2006) indicates that Americans score higher on individualism and masculinity and lower on long-term orientation than, for example, Chinese. These cultural differences have been implicated in various kinds of managerial decisions (e.g., Tse et al. 1988) and, in the case of entry strategy, would seem to favor beliefs in the advantages of moving first. (For example, individualism and masculinity favor risk-taking by Americans, whereas long-term orientation and collectivism favor risk-avoidance among Chinese; Hofstede 2005.) Thus, priming American culture is hypothesized to increase beliefs in first mover advantage by activating a cultural mindset that favors first-ness. Such culturally primed beliefs are compared to control groups for whom either no culture or Chinese culture is primed. (The Chinese culture condition should be viewed as an additional control group for experimental purposes to rule out any effects of mere priming alone. Because Americans are unlikely to identify with Chinese culture, priming is not expected to reduce beliefs in first mover advantage; Reed 2004.)

Method

Subjects and Design. Participants were staff and students of two universities and a hospital who received financial remuneration for their participation.⁷ Each participant was randomly assigned to one of three groups (Prime: American culture, Chinese culture, No prime) in a between-subjects design. A total of 128 participants, screened for American nationality, completed the experiment.

⁷ The goal in designing this study (and the studies that follow) was to find participants who were naïve about the business literature concerning first mover advantage. Participants typically had no business experience or introductory coursework only, and analysis reveals no effects of such limited exposure.

Materials and Procedure. The experimental materials were administered online in two ostensibly unrelated tasks. In the first task, the priming manipulation was administered by instructing participants as follows (priming manipulations for American/Chinese culture are shown in square brackets):

We are interested in finding out about how people view [American/Chinese] culture. In this exercise, we would like you to list what you feel are important aspects of [American/Chinese] culture. For example, what beliefs, values, customs and behaviors do you feel are typical of [American/Chinese] people and [America/China]?

After an open-ended thought-listing task, participants rated “how easy or difficult was this task” on an eleven-point scale (with endpoints “very difficult/very easy”). Participants in the no-prime condition omitted this first task.

In a subsequent task, participants were asked to read a scenario describing two firms as follows:

Imagine that Firm M launches a new consumer product. A year later, Firm N launches a competing product. Other than Firm M and N, no similar products are available.

Participants were then asked “Which firm is likely to achieve greater market share?” and “Which firm is likely to be more profitable?” Participants responded on two eleven-point scales with endpoints “Firm M” and “Firm N”. Participants were also asked to estimate the market share for each firm both in percentage of total units sold and in percentage of total profits earned on this product, assuming only two firms compete in the market.

Results

Manipulation check. As expected, American participants rated the task priming American culture easier than the task priming Chinese culture ($M_{American} = 7.00 (2.80)$ vs. $M_{Chinese} = 5.64 (2.66)$; $F(1, 88) = 5.55, p < .05$). This result is consistent with the hypothesis that, for an American population sample, priming American culture will be effective and thereby enhance first mover beliefs whereas priming Chinese culture will not.

First mover beliefs. Planned contrasts of market share and profitability ratings and percent

estimates (coded in all studies such that higher numbers reflect greater first mover success) were conducted using MANOVA. The pattern of results, shown in table 3, is consistent with the hypotheses. As expected, judgments did not differ for participants receiving no prime or the Chinese culture prime ($F(1, 125) = 1.04, p = .31$); mean ratings of both groups favored the first mover (in mid-point comparisons, p 's $< .05$). More importantly, ratings favored the first mover even more when American culture was primed ($F(1, 125) = 10.66, p < .01$).⁸

Overall, these results suggest that beliefs in first mover advantage may be rooted in one's culture. Even naïve respondents indicated beliefs in first mover advantage. Moreover, priming American culture enhanced first mover beliefs, consistent with a culture that favors first-ness.

Insert table 3 about here.

STUDY 2B: FIRST MOVER BELIEFS IN CHINA AND USA

To further examine the notion that culture drives first mover beliefs, a follow-up study was conducted in China and the United States. Song et al. (1999) surveyed managers and found that overall beliefs in the advantages of being first were reduced but not eliminated in Asian countries (Song, DiBenedetto, and Zhao 1999, p. 820). The present research investigates naïve beliefs in the advantages of moving first. Consistent with study 2A, it is hypothesized that Americans will favor first mover beliefs more than their Chinese counterparts.

Method:

Subjects and Design. The experiment was a 2-group (Culture: Chinese/American) between-subjects design. Participants were undergraduate students from China and the United States (screened to omit non-native subjects and Asian-Americans) who received financial payment for participating in the

⁸ Follow-up univariate ANOVAs conducted for each dependent variable are consistent with the main analysis and omitted for brevity's sake (throughout the studies).

study. A total of 114 subjects participated.

Materials and Procedure. All participants read the same new product scenario used in study 2A and answered the same dependent variables. In addition, participants responded to various background items, including a seven-item seven-point scale measuring uncertainty orientation (e.g., “I believe it is important for us to challenge our beliefs”, “I often put myself in situations in which I could learn something new”; Smith and Bristor 1994). Note that the questionnaire was translated into Chinese and then verified by back-translation procedure using two translators unaware of the hypotheses.

Results:

Recall that participants rated market share and profitability and provided percent estimates for market share and profits. As the pattern in table 3 indicates, American and Chinese respondents typically favor the first-mover (in midpoint comparisons, all $p < .05$ with one exception). MANOVA of these dependent variables as a function of cultural sample revealed a significant effect ($F(1, 112) = 6.06, p < .05$), with Americans reporting more favorable first mover beliefs than their Chinese counterparts. These results appear consistent with Song et al. (1999) who found evidence for first-mover advantage beliefs across managers in manufacturing industries across multiple countries, including China and the United States. However, the present results also suggest that such beliefs may be rooted more strongly in culture in the USA than China.

The present research argues that Chinese and American differences in first mover beliefs likely arise from personal and cultural experiences that shape attitudes, for example, towards uncertainty and risk of moving first. An index, constructed by averaging items on the uncertainty orientation scale (coefficient $\alpha = 0.90$), confirms that American respondents were more favorable toward uncertainty than their Chinese counterparts ($M_{American} = 5.69 (0.96)$ vs. $M_{Chinese} = 5.12 (1.07)$; $F(1, 113) = 8.76, p < .01$). A follow-up mediational analysis investigated whether these differences could account for the findings on first-mover beliefs. Specifically, a MANOVA with cultural sample, uncertainty avoidance

(standardized $M = 0(1)$), and their interaction as predictor variables reveals a significant effect of uncertainty avoidance ($F(1, 110) = 4.68, p < .05$); the effect of cultural sample is now marginal ($F(1, 110) = 3.31, p = .07$). These results suggest that uncertainty orientation partially mediates cultural differences in first mover beliefs and is further evidence of the role played by cultural experience.⁹

STUDY 3A: FIRST MOVER EXPERIENCE (GENERATED EXEMPLARS)

The empirical evidence thus far suggests that first mover beliefs are reflected in (study 1A), and reinforced by (studies 1B, 2A and 2B), the cultural environment. The present research argues that people are receptive to believing in first mover advantage because it resonates with personal and cultural experience, particularly in America where first-ness is associated with success. To provide additional evidence for this thesis, the present study focuses on the role of personal experience—specifically, self-generated exemplars where moving first is an advantage or disadvantage—and its impact on first mover beliefs in a business context. This study also serves a second objective, namely to examine the perseverance of first mover advantage beliefs despite attempts to counteract them (via disadvantage exemplars).

On the one hand, prior research suggests that initial beliefs tend to persevere, even when based on weak data that is later discredited (Anderson, Lepper, and Ross 1980). First, strong prior beliefs lead people to evaluate evidence in a biased manner, accepting confirmatory evidence while subjecting disconfirming evidence to critical evaluation (Lord, Ross, and Lepper 1979). Second, additional thought may lead to attitude polarization, especially if people are committed to initial evaluations or thought is driven by simple schema (Millar and Tesser 1986). Thus, adopting a focal hypothesis (say, an initial belief in first mover advantage) and elaborating on this hypothesis appears to induce directional thought that reinforces initial judgment, leading to belief perseverance. Third, judgments are susceptible to

⁹ Of course, there are likely other aspects of the social, political and economic environment that contribute to the observed differences in first mover beliefs. The importance of these factors is not discounted; rather, they add to the argument that culture and how it shapes personal experience play an important role in first mover beliefs.

confirmation bias; that is, people appear to spontaneously generate supportive reasons when making judgments (e.g., Koriat, Lichtenstein, and Fischhoff 1980; Wilson and LaFleur 1995). Finally, prompting people to ‘consider the opposite’ improves judgment but does not appear to occur spontaneously (Lord, Lepper, and Preston 1984). Taken together, these findings suggest that initial beliefs have a spontaneous tendency to endure and may be difficult to counteract.

On the other hand, the notion that initial beliefs tend to persevere does not mean that they cannot be overcome. Although strong priors tend to persevere, recency effects in judgment suggest that belief perseverance is not a foregone conclusion—especially when beliefs are subjected to counterattack. First, Hoch (1984) provides evidence that output interference effects favor initial beliefs only under relatively narrow conditions (when competing beliefs are considered sequentially and in close temporal order). Second, Anderson and Sechler (1986) suggest that counterexplanation may be effective at overcoming initial beliefs when the contradictory evidence supports an alternative or counter-belief (rather than a null belief). Indeed, research by Hirt and Markman (1995) suggests that initial beliefs can be countered merely by considering multiple alternatives, which undermines confidence in judgment. Taken together, these findings suggest that initial beliefs can be overcome via counterattack or the use of corrective procedures aimed at improving the evenhandedness of judgment. In the studies that follow, the perseverance of beliefs in first mover advantage despite explicit counterattacks and correctives is explored.

The present study examines first mover advantage beliefs in a business context after prompting people to reason by analogy to other domains. Some participants will generate examples where moving first is an advantage, and others will generate examples where moving first is a disadvantage. (These conditions may be viewed as baselines for comparison purposes.) Participants in the control group will not be asked to explicitly generate any examples. It is hypothesized that, if culture provides a strong focus on the advantages of being first, then control condition participants should exhibit a strong,

spontaneous belief in first mover advantage (similar to the belief of participants who generate examples where moving first is an advantage). Furthermore, depending on how predisposed people are to believe in the advantages of being first, then the effect of the explicit “corrective”—asking people to generate examples where moving first is a disadvantage—may or may not be sufficient to reverse dominance of the broader cultural belief in moving first.

Method

Subjects and Design. Participants were undergraduate students without business experience who participated in a survey for modest financial compensation or undergraduate students in an introductory marketing class who participated for extra credit. Each participant was randomly assigned to one of three groups (Generate exemplars: Advantage, Disadvantage, None) between-subjects design. A total of 85 participants completed the experiment.

Materials and Procedure. The experimental materials were contained in a booklet. Participants were asked to generate examples from past experience where moving first was an advantage or disadvantage; participants in the control group did not generate examples. The instructions read as follows [with the manipulation shown in square brackets]:

We are interesting in finding out about how people learn from experience. People come from a variety of backgrounds, and their past experiences help to form their beliefs about the world. In this brief exercise, we would like you to list some situations where you think going first is an [advantage / disadvantage]. Your examples can come from any domain: business, sports, politics, etc.

These participants were then instructed to list 4 examples. Participants also rated the ease/difficulty of the generation task on two seven-point scales. Participants in the control condition did not generate examples or provide ratings.

All participants then read a short new product scenario as follows:

Imagine that two firms are developing a new product for the American marketplace. Each firm is excited about the potential of this really new product, which is an innovation with no close substitutes in the marketplace. Both firms have kept the new product’s development secret so the reaction of consumers remains to be seen. Firm X plans to develop and launch the new product

by the middle of next year. Firm Y plans to do so by the end of next year.

Participants were then asked “Which firm will ultimately achieve greater success in the marketplace with this new product?” Participants responded on a seven-point scale anchored by “Firm X more successful” and “Firm Y more successful”, with the midpoint (0) indicating “Both equally successful”. Participants briefly explained this judgment and then estimated the market share for each firm, assuming only two firms compete in the market.

Results

Manipulation Check. The manipulation was assessed by counting the number of exemplars generated by participants, which did not differ as a function of advantage versus disadvantage ($M_{advantage} = 3.57 (0.76)$ vs. $M_{disadvantage} = 3.69 (0.75)$; $F < 1$). Nor were differences found in task difficulty ($M_{advantage} = 3.24(1.52)$ vs. $M_{disadvantage} = 3.04(1.34)$; $F < 1$), also suggesting that the example generation tasks were equally effective.¹⁰

First mover beliefs. Planned contrasts of success ratings and market share estimates were conducted using MANOVA. The pattern of results, shown in table 4, is consistent with the hypotheses. As expected, participants in the control condition were just as favorable about the prospects of the first mover as participants in the Advantage condition (who explicitly generated examples where going first is an advantage) ($F < 1$); mean judgments of both groups favored the first mover (in midpoint comparisons, p 's $< .05$), indicating a spontaneous belief in first mover advantage. Moreover, the belief in first mover advantage was not significantly weaker in the Disadvantage condition ($F < 1$), although the results are directional .

These results indicate the powerful nature of first mover beliefs. All participants demonstrated beliefs in first mover advantage. First mover beliefs were equally strong whether participants generated

¹⁰ A small number of examples was deliberately chosen to ensure that all subjects would be able to perform the task for an effective manipulation.

exemplars where moving first is an advantage or not, suggesting that culture may spontaneously focus on the advantages of first-ness. Generating disadvantage exemplars had no effect, suggesting that first mover beliefs may be difficult to counteract. Although it is possible that the manipulation was ineffective, this kind of task—*generating examples*—has proven successful at altering subsequent judgments in other work (e.g., Tversky and Kahneman 1973; Schwarz et al. 1991). However, given the caution with which one should approach conclusions based on null effects, a follow-up study was conducted in which the manipulation was strengthened by explicitly presenting exemplar-based experience.

Insert table 4 about here.

STUDY 3B: FIRST MOVER EXPERIENCE (PRESENTED EXEMPLAR)

Study 3A suggests that reasoning by analogy to examples from past experience is insufficient to undo the spontaneous belief in the advantages of being first. Although this result suggests the powerful nature of such beliefs, it is possible that participants found such examples from past experience unconvincing or difficult to retrieve from memory, thereby weakening the effectiveness of the manipulation. In the present study, this issue is overcome by presenting an explicit example where moving second is advantageous or disadvantageous. Thus, study 3B provides a more conservative test of the hypotheses concerning first mover beliefs. As in study 3A, it is hypothesized that participants will hold spontaneous beliefs in first mover advantage. Specifically, participants in a control condition are expected to have significant beliefs in first mover advantage—similar to beliefs of participants presented with an example where moving first is advantageous. In addition, the present study investigates whether presenting an example where moving first is a disadvantage will be sufficient to undo beliefs in first mover advantage.

Method

Subjects and Design. Participants were undergraduate students without business experience who participated in a survey for modest financial numeration or undergraduate students in an introductory marketing class who participated for extra credit. Each participant was randomly assigned to one of three groups (Presented exemplar: Advantage, Disadvantage, Control group) between-subjects design. A total of 94 participants completed the experiment.

Materials and Procedure. The experimental materials were contained in a booklet. In the first task, participants were presented with a sports example where the experience was described to reflect first mover advantage versus disadvantage versus control group. All participants read a short description of curling. Participants in the Advantage condition then saw a diagram labeled “controlling the house through early play” and read the following:

The difference between winning and losing a curling match is most often decided by strategy. For example, the first team to play in an end can ‘draw’ or position their stone (A) close to the center of the house and then place ‘guards’ (Stone B) in front to protect it from a later play by an opponent (Stone C). As a result, many players believe in a ‘first-stone advantage’ in curling – that the stones played early in the game are the key to success.

Participants in the Disadvantage condition saw a diagram labeled “controlling the house through later play” and read the following:

The difference between winning and losing a curling match is most often decided by strategy. For example, the second team to play in an end can throw a ‘take-out’ stone (B) and knock the opposing team (A) out of the house. As a result, many players believe in a ‘second-stone advantage’ in curling – that the stones played later in the game are the key to success.

Participants in the Control condition saw a diagram labeled “the skip decides on strategy” and read the following:

The difference between winning and losing a curling match is most often decided by strategy. For example, the captain must “read” or judge the speed of the ice, the curl of the rock and the amount of sweeping needed as the stone moves down the ice (A) in order to place the stone where desired. The captain (called the “skip”) decides on strategy in curling.

Participants then responded to several questions about curling that served as manipulation checks, including their preference for order of play (on a seven-point scale anchored by “definitely play the first

stone / definitely play the second stone”) and their estimate of the number of ends won (out of 100) by teams who played the first and second stone.

In a subsequent task, all participants read the same new product scenario used in study 3A and answered the same questions.

Results

Manipulation Check. The manipulation was assessed by analyzing responses to the curling scenario. As intended, participants in the Advantage condition indicated that they would be more likely to choose to play first ($M_{advantage} = 2.90(1.97)$, $M_{disadvantage} = 5.67(1.22)$; $F(1, 91) = 40.71$, $p < .01$) and that teams playing first would win more ends ($M_{advantage} = 58.5(11.9)$, $M_{disadvantage} = 38.0(13.6)$; $F(1, 91) = 36.39$, $p < .01$) compared to participants in the Disadvantage condition. Hence, the manipulation of advantage versus disadvantage exemplars was successful. Participants in the Control condition responded similarly to participants in the Disadvantage condition for choosing to play first ($M_{control} = 5.09(1.87)$; $F(1, 91) = 1.83$, $p = .18$) and ends won ($M_{control} = 43.9(14.3)$; $F(1, 91) = 3.20$, $p = .08$), which allows for a stronger control group test of the first mover advantage belief in the new product scenario.

First mover beliefs. Planned contrasts of success ratings and market share estimates were conducted using MANOVA. The pattern of results, shown in table 4, is consistent with the hypotheses. As expected, participants in the control condition were just as favorable about the prospects of the first mover as participants in the Advantage condition (who explicitly generated examples where going first is an advantage) ($F < 1$); mean ratings of both groups favored the first mover (in comparisons to the mid-point of the scale, p 's $< .05$). Moreover, beliefs in the Disadvantage condition were marginally less favorable ($F(1, 91) = 3.52$, $p = .06$) but did not reverse to favor the later entrant. These results attest to the powerful nature of the belief in first mover advantage for the participants, consistent with the findings of study 3A.

STUDY 4: FIRST MOVER EXEMPLARS VERSUS REASONS

Studies 3A and 3B indicate that people hold spontaneous beliefs in first mover advantage that can be reduced (but not eliminated) when they are forced to contemplate examples of the disadvantages of going first. Thus, beliefs in first mover advantage appear to be powerful and difficult to reverse—because they are driven by cultural beliefs and past experience that are difficult to overcome. Interestingly, research by Bolton (2003) demonstrates that initial beliefs based on nonanalytic thinking (e.g., scenario generation or reasoning by analogy) are more likely to persevere than initial beliefs based on analytic reasoning (e.g., pros and cons). Because beliefs in first mover advantage are argued to arise from broader personal and cultural experience, first-mover beliefs may be primarily nonanalytic in nature—driven, for example, by scenarios and analogies drawn from experience in other domains and applied to a new setting. If so, then beliefs in first mover advantage may be especially strong and resistant to change.

The purpose of the present experiment is to test the hypothesis that first mover beliefs driven by analogical experience are stronger than first mover beliefs driven by analytic reasoning. Specifically, disadvantage exemplars are hypothesized to be difficult to generate (because of a cultural bias favoring first-ness) and, as a result, exemplars will be more one-sided than reasons—thereby favoring first mover advantage over disadvantage. In contrast, reasoning is expected to be relatively evenhanded so generating reasons for advantage versus disadvantage will lead to differential beliefs in first mover advantage.

Method

Subjects and Design. Participants were undergraduate students who participated for extra credit in a marketing class. Each participant was randomly assigned to one of four groups in a 2 (Exemplars vs. Reasons) x 2 (Advantage vs. Disadvantage) between-subjects design. A total of 118 participants completed the experiment.

Materials and Procedure. The experimental materials were contained in a booklet. In the

Exemplar condition, participants were asked to “list examples where moving first is an [advantage/disadvantage]”; in the Reason condition, participants were asked to “list reasons why moving first is an [advantage/disadvantage]”. After the generation task, participants rated the ease/difficulty of the task on a seven-point scale (with endpoints “very difficult/very easy”).

Participants were then asked to read the following scenario:

Imagine that Firm M launches a new consumer product in the United States. A year later, Firm N launches a competing product. Other than Firm M and N, no similar products are available.

Participants were asked “Which firm is likely to be more profitable?” and rated profitability on a seven-point scale anchored by “Firm M more successful” and “Firm N more successful”, with the midpoint (0) indicating “Both equally profitable”. Participants were also asked to estimate percentage profits for each firm, assuming only two firms compete in the market.

Results

Profitability ratings and percent profit estimates were analyzed as a function of Exemplar/Reasons and Dis/Advantage, with Ease of Generation as a continuous covariate. As expected, MANOVA revealed an interaction of Exemplar/Reasons and Dis/Advantage ($F(1, 121) = 5.13, p < .05$), qualified by an interaction with Ease of Generation ($F(1, 121) = 5.13, p < .05$). To understand the nature of the interaction, the coefficient of the covariate nested in each condition is examined. As table 5 indicates, judgments did not differ by Dis/Advantage in the Exemplar conditions ($F(1, 60) = 1.57, p = .22$), but were lower for Disadvantage than Advantage Reasons ($F(1, 61) = 3.76, p = .06$). Moreover, Ease of Generation reduces profitability ratings ($b = -0.32 (0.16); p < .05$) and percent profit estimates ($b = -2.69 (1.35); p < .05$) when Disadvantage Exemplars were generated but otherwise has no effect (all n.s.).

Insert table 5 about here.

Taken together, these results suggest that exemplar-based reasoning favors first mover

advantage, primarily due to the difficulty of generating exemplars of first mover disadvantage. In contrast, analytic reasoning is more evenhanded and generating reasons for first mover disadvantage is relatively easy and neutralizes—but does not reverse—first mover advantage beliefs. These results are consistent with the hypothesis that exemplar-based first mover beliefs are especially powerful.

STUDY 5: FIRST MOVER LABELS

Evidence thus far suggests that cultural and personal analogical experience contributes to first mover beliefs that are sticky and difficult to undo. However, beliefs in first mover advantage are characterized by another interesting property—the label “first mover advantage” that identifies the belief itself. Prior research by West, Brown and Hoch (1996) suggests that vocabulary can provide a framework for learning and judgment by helping people to develop their own schema. Over time, the vocabulary “label” may become attached to a complex schema that allows people to recall and consider a whole complex of knowledge, even parts of the schema that are not explicitly mentioned (Rubin 1995, p.22). Indeed, past research suggests that schema drive inference-making that makes assumptions and fills in missing information during judgment (cf. Alba & Hutchinson 1987). A labeled belief, such as “first mover advantage”, may therefore be particularly compelling because it serves as an easy retrieval cue for a complex network of evidence and associations supporting beliefs in first mover advantage. Such a label may also serve as a focal hypothesis that affects how people learn from experience (Deighton 1984; Hoch & Ha 1986; Hoch & Deighton 1989).

Thus, the label attached to beliefs in first mover advantage is hypothesized to lend it legitimacy and protect or insulate against counter-beliefs. Specifically, the present study hypothesizes: a) a spontaneous belief in first mover advantage; b) weakened beliefs in first mover advantage when the competing firm is labeled a “rapid responder”; and c) an insulating effect of the first mover label against contradictory information about the firm.

Method

Subjects and Design. Participants were undergraduate students who participated for extra credit in an introductory marketing class. Each participant was randomly assigned to one of six groups in a 3 (Label: first mover, rapid responder, no label) x 2 (Information: contradictory, neutral) between-subjects design. A total of 208 participants completed the experiment.

Materials and Procedure. The experimental materials were contained in a booklet. Participants were asked to read a scenario describing two firms. In the Neutral Information version, the firms were described without detail as follows:

Consider two firms. Both firms are about the same size, and both have past experience in the consumer products industry.

In the Contradictory Information version, the following detail was added:

Firm M was originally a family firm, founded by a benevolent patriarch who first passed on the firm to his children and more recently to professional managers outside the family. Firm N was founded 20 years ago by two entrepreneurs who raised investment capital to support their business.

This additional detail was designed to confer a disadvantage on Firm M (the first mover) and an advantage on Firm N (the second mover) inasmuch as participants perceive an advantage of entrepreneurship over family/professional management. (This manipulation was checked in a separate pre-test reported in the results section.)

Participants were then asked to consider a new product launch as follows:

Imagine that Firm M launches a new consumer electronics product in the United States. A year later, Firm N launches a competing product. Because the newly launched product is an innovation in the field, neither firm has past experience with the new product category. Other than Firm M and N, no similar products are available.

In the first mover label conditions, participants were also told: “In terms of competitive strategy, firm M is considered the “first mover”.” In the rapid responder label condition, participants were told: “In terms of competitive strategy, firm N is considered the “rapid responder”.” In the no-label condition, participants were not given any label for either firm.

Participants were then asked “Which firm is likely to be more profitable with this new consumer

electronics product?” Participants responded on a seven-point scale anchored by “Firm M more profitable” and “Firm N more profitable”, with the midpoint (0) indicating “Both equally profitable”. Participants also estimated percentage profits for each firm, assuming only two firms compete in the market.

Results

Manipulation check. In a separate 2-group (Information: contradictory, neutral) between-subjects design, 35 participants rated the profitability and percent profits for each firm under simultaneous launch conditions. As expected, profitability ratings ($M_{neutral} = 0.35$ (0.86) vs. $M_{contradictory} = -1.11$ (1.18); $F(1, 33) = 17.34, p < .01$) and percent profit estimates ($M_{neutral} = 51.76$ (8.83) vs. $M_{contradictory} = 39.72$ (9.77); $F(1, 33) = 14.58, p < .01$) were less favorable for firm M when contradictory information was included in the scenario. Thus, the manipulation of information in the scenario successfully conferred a disadvantage on Firm M inasmuch as participants perceived an advantage of entrepreneurship over family/professional management.

First mover beliefs. Planned contrasts of profitability ratings and percent profit estimates were conducted using MANOVA. The pattern of results, shown in figure 2, is consistent with the hypotheses. The first hypothesis predicted that participants would hold spontaneous beliefs in first mover advantage. As in previous studies in the absence of contradictory information, spontaneous judgment (i.e., when no label was provided) favored the first mover (in midpoint comparisons, p 's $< .05$), and was equal to judgment when a first mover label was provided ($F(1, 102) = 1.10, p = .30$). In support of the second hypothesis, judgments were less favorable—neutralized but not reversed—when the second mover was labeled a rapid responder ($F(1, 102) = 6.70, p = .01$).

The third hypothesis tested whether the previous hypotheses would also hold when additional descriptive detail was added favoring the second mover (Firm N, described as more entrepreneurial). Thus, participants presented with contradictory information (favoring the second mover) were expected

to hold weaker beliefs in first mover advantage than participants not presented with such evidence; however, the first mover label was expected to insulate against such effects. This hypothesis is supported in two ways. First, a 3 x 2 MANOVA reveals a main effect of contradictory information ($F(1, 202) = 9.37, p < .01$), such that first mover advantage beliefs are weakened—but not reversed—when contradictory evidence is presented. Second, judgments in the presence of contradictory information did not differ for the No-label and Rapid responder conditions ($F < 1$) but were more favorable in the First mover condition ($F(1, 100) = 3.55, p = .06$). Thus, contradictory information was sufficient (as intended) to weaken beliefs in first mover advantage; nonetheless, the first mover label appears to somewhat insulate people and protect their beliefs about the advantages of moving first.

Insert figure 2 about here.

Overall, these results indicate a spontaneous belief in first mover advantage that is difficult to counteract. Providing contradictory evidence or labeling the opposing “rapid responder” strategy was sufficient to neutralize—but not overcome—the first mover belief. Thus, beliefs in first mover advantage appear to be strong and difficult to supplant with a counter-belief in rapid responder advantage.

STUDY 6: FIRST MOVER EXPERIENCE (EXEMPLARS AND MANAGERS)

The studies thus far suggest that first mover beliefs are rooted in personal and cultural experience favoring first-ness. In particular, exemplars favoring first-ness in personal experience make naïve respondents receptive to believing in first mover advantage in a business setting (studies 3A, 3B, and 4) and the “first mover advantage label” also serves to insulate their beliefs from counterattack (study 5). The present research argues that such favoritism towards first-ness will carry over during professional education and experience to further reinforce beliefs in first-mover advantage among managers. Although the previous experiments deliberately investigated respondents without business experience,

the present study focuses on business professionals to examine the perseverance of first mover beliefs. On the one hand, it might be argued that professionals will acquire business knowledge or experience (such as disadvantage exemplars) that undermines their belief in first mover advantage. On the other hand, study 1A suggests that business knowledge or experience reflected in the mainstream media will reinforce beliefs in first mover advantage. Consistent with the previous findings, the present study of business professionals hypothesizes: a) a spontaneous belief in first mover advantage; and b) weakened beliefs in first mover advantage when disadvantage exemplars are considered.

Method

Subjects and Design. Participants were recruited by mailing an invitation to participate in an online study to a random selection from the membership directory of the American Marketing Association (omitting educators). Survey incentives included a donation to a charity designated by the participant and a lottery for a place in an executive education program at a leading business school. Each participant was randomly assigned to one of four groups (Generate exemplars: Advantage, Disadvantage, Both, None) in a between-subjects design. A total of 85 participants completed the experiment.

Materials and Procedure. The experiment was administered online. Participants were asked to generate examples from past experience where moving first was an advantage or disadvantage or both; participants in the control group did not generate examples. After a short introduction, the instructions read as follows [with the Advantage / Disadvantage / Both manipulation shown in square brackets]:

We would like you to think about examples where you think going first is an [advantage / disadvantage / advantage and/or disadvantage]. Please describe these examples of first-mover [success / failure / success and/or failure]. (These examples can consider moving first in any domain: business, sports, politics, etc.)

After this open-ended task, participants rated the ease/difficulty of generating reasons for success and/or failure on seven-point scales. Participants in the fourth group did not generate examples or provide ratings.

All participants then indicated their agreement on a seven-point scale (with endpoints “strongly disagree/strongly agree”) with the statement: “When firms enter new markets, the first-mover has a significant advantage over followers.” Several additional items were also asked for filler purposes. All participants then read a short new product scenario as follows:

Two firms are developing a new product for the American marketplace. Each firm is excited about the potential of this really new product, which is an innovation with no close substitutes in the marketplace. Both firms have kept the new product's development secret so the reactions of consumers remain to be seen. Firm X plans to finish development and launch the new product about 6 months from now. Firm Y plans to do so about one year from now.

Participants were then asked “Which firm will ultimately achieve greater success in the marketplace with this new product?” and responded on a seven-point scale anchored by “Firm X more successful” and “Firm Y more successful”. Participants also estimated the percentage of total profits earned by each firm (assuming only two firms compete in the market). Participants were also asked: “If you were to invest in only one of these firms, which would you choose?” and selected either firm X or firm Y. Finally, participants provided background information, including employment and demographic information.

Results

Sample participants were AMA members, 50.6% male and 49.4% female, with a median age range of 35-44, and holding executive level (33%), manager (35%), consulting (11%) or other positions (board member, etc.). The sample averaged 3.72 (2.19) years in new product development, working on or overseeing 13.2 (16.4) new products.

Manipulation Check. The manipulation was assessed by asking two judges, blind to condition, to rate the open-ended cognitive responses on five-point scales for the amount written (very little/a lot), the valence (negative/positive) and the content (exemplars/reasons). Inter-coder agreement was 83.1%, and disagreements were resolved by the first judge. Neither the amount written nor the degree to which content reflected exemplars (versus reasons) differed by condition (F 's < 1). As expected, exemplars

were rated more positive when advantage versus disadvantage exemplars were generated ($M_{advantage} = 3.67 (1.67)$ vs. $M_{disadvantage} = 1.86 (1.03)$; $F(1, 35) = 12.47, p < .01$)—indicating that the manipulation was successful.

Interestingly, exemplars were rated equally positive when participants were asked to generate both advantage and disadvantage exemplars versus advantage exemplars only ($M_{both} = 3.50 (1.17)$ vs. $M_{advantage}$; $F < 1$)—consistent with a bias favoring first mover advantage. In addition, participants rated the task marginally more difficult when generating disadvantage versus advantage exemplars ($M_{disadvantage} = 4.82 (2.19)$ vs. $M_{advantage} = 3.65 (2.03)$; $F(1, 46) = 2.94, p < .10$)—also consistent with a bias favoring first mover advantage.

First mover beliefs. Planned contrasts of agreement and success ratings and market share estimates were conducted using MANOVA. The pattern of results, shown in table 6, is consistent with the hypotheses. As expected, participants were equally favorable about the prospects of the first mover when they generated advantage exemplars, both advantage and disadvantage, or neither ($F < 1$); mean judgments of the combined group favored the first mover (in midpoint comparison, $p < .05$), indicating a spontaneous belief in first mover advantage. Moreover, the belief in first mover advantage was not significantly weaker in the Disadvantage condition ($F < 1$), although the results are directional.

Turning to the investment choice data, logistic regression reveals no difference when participants generated advantage, both advantage and disadvantage, or no exemplars ($\chi^2 = 2.95, p = .22$); the majority of participants (81% chose the first mover). However, choice of the first mover was reduced (to 53%) when participants generated disadvantage exemplars ($\chi^2 = 5.30, p < .05$). In a follow-up analysis, this choice difference was shown to be mediated by the valence of the generated reasons. ANOVA of valence ratings reveals a significant contrast for Disadvantage versus the remaining conditions ($F(1, 36) = 15.93, p < .01$). When valence is standardized ($M = 0(1)$) and included as a covariate in the logistic regression of choice, the condition contrast is no longer significant ($\chi^2 = 0.74, p = .39$) and valence is a

significant predictor ($\chi^2 = 4.21, p < .05$).

Insert table 6 about here.

These results indicate the powerful nature of the belief in first mover advantage among business professionals. All participants demonstrated beliefs in first mover advantage. First mover beliefs were equally strong regardless of whether exemplars were generated reflecting advantage, both advantage and disadvantage, or neither, suggesting that culture may spontaneously focus on the advantages of first-ness. Generating disadvantage exemplars had no effect on first mover judgments and reduced—but did not reverse—an investment decision favoring the first mover. As with study 3A, the null findings for judgment data could be interpreted as evidence that the manipulation was ineffective (especially for managers who may already have well-formed first mover beliefs). However, judge’s ratings indicate that participants were able to generate more negative exemplars (albeit with difficulty)—suggesting that managers simply did not find disadvantage exemplars sufficiently informative when reporting their first mover beliefs. Moreover, the (arguably more sensitive measure of) investment decisions reported by these managers do indicate that generating exemplars of first mover disadvantage reduces but does not reverse decisions favoring the first mover.

Overall, these results are consistent with the previous findings and attest to the perseverance of first mover beliefs among a sample of business professionals. Exemplars of first mover disadvantage are not spontaneously salient whereas advantage exemplars are; in consequence, both naïve and professional beliefs favor the first mover.

FINAL DISCUSSION

This research investigates the origin of first-mover beliefs, arguing that the success of the idea of first mover advantage in the social marketplace of ideas is rooted in cultural beliefs and personal experience that favor “first-ness”. Beliefs in first mover advantage dominate the mainstream media

despite mixed evidence in the academic literature (study 1A), and exposure to the business press is associated with increased belief in first mover advantage (study 1B). Indeed, first mover beliefs appear rooted in culture: first mover beliefs are enhanced by priming American culture (study 2A) and are more favorable among American versus Chinese respondents (study 2B). Subsequent experimental work confirms that even naïve subjects exhibit spontaneous beliefs in first mover advantage. Such spontaneous beliefs are as strong as beliefs reported after considering self-generated or presented exemplars favoring moving first (studies 3A and 3B), and exemplar-driven judgment produces stronger beliefs in first mover advantage than analytic reasoning (study 4). Moreover, such beliefs tend to persevere: first mover beliefs are neutralized but not reversed by considering exemplars of the disadvantages of moving first (studies 3A, 3B, and 4). Providing contradictory evidence or labeling the opposing “rapid responder” counter-belief also proved insufficient to overcome spontaneous first-mover beliefs (study 5). Finally, the findings for personal and analogical experience also held for a professional sample with business experience (study 6). Taken together, these studies suggest that beliefs in first mover advantage are “sticky” and difficult to overcome, rooted as they are in personal experience and the cultural environment.

The present research has several implications for marketers. First, first mover advantage beliefs are rooted in personal and cultural experience that favors first-ness. As such, managers may find it difficult to reason by analogy in an evenhanded manner since disadvantage exemplars can be difficult to generate. Hence, it will be important to expose managers to exemplars where moving first is a disadvantage (e.g., during business education or via devil’s advocacy practices within firms) in order to neutralize the bias towards moving first. (Indeed, from an education perspective, labeling business concepts such as “first-mover advantage” may be a double-edged sword, increasing their persuasiveness yet insulating managerial beliefs from subsequent updating.) Second, non-analytic judgments based on exemplars produce “stickier” priors than analytic judgments (see also Bolton 2003). Hence, managers

should be encouraged to engage in evenhanded reasoning about the pros and cons of moving first in a particular context, rather than relying on analogies or intuition (as some research and business books endorse). Third, *consumer* attitudes toward pioneer brands may also be rooted in cultural experience that favors ‘firstness’. Past research has implicated consumer learning and brand retrieval and consideration processes in consumer preference for pioneers (e.g., Kardes and Kalyanaram 1992; Carpenter and Nakamoto 1989). The present research suggests that, independent of such processing effects, mere knowledge that a brand was first mover may be sufficient to induce a preference for it. Finally, first-mover beliefs differ across cultures. In international markets, it will be important to understand how managerial and consumer views of first mover advantage vary as a function of cultural background. For example, marketing communications that emphasize a brand’s pioneering role may be more effective in cultures that favor first-ness (such as American and western cultures). Similarly, managers in such cultures may place undue emphasis on moving first compared to other strategies for achieving success in the marketplace.

First-mover beliefs have significant economic consequences: witness the dot-com era, when firms assumed that they needed to move first and that a broader plan to make money would become clear eventually (Useem and Grainger 2000). Future research might investigate other managerial beliefs of economic consequence that persist despite mixed empirical evidence (or evidence to the contrary). For example, does a cultural belief that “bigger is better” (e.g., wanting the largest piece of pie, super-sizing your fries, building jumbo jets and the world’s tallest skyscraper) extend to strategic beliefs that larger firms will be more profitable than smaller firms? To the author’s knowledge, little research has investigated the nature of folk beliefs, their relationship to managerial beliefs about marketing and business strategy and, in turn, compared them to empirical research. Such research may also shed light on potential correctives (e.g., presenting, not self-generating, opposing exemplars) if folk wisdom and cultural beliefs drive erroneous managerial decision-making. Moreover, managers may benefit from a

better understanding of the origin of strategic beliefs in personal and cultural experience.

The present research also addresses the diffusion of ideas in the social marketplace. Urban legends propagate because they evoke basic emotional responses which prompt people to tell them (Heath, Bell, and Sternberg 2001), epic sagas and folk ballads propagate because they trigger multiple cognitive systems that help people to remember them (Rubin 1995), and proverbs, rumors, and catchphrases survive better when they have a prevalent “habitat” in the external environment that cues them regularly (Berger and Heath 2005). The present work identifies another mechanism—fit with pre-existing cultural and personal experience—that also promotes success. At its core, idea diffusion may be due to a primacy effect that favors initial beliefs—a “first mover advantage” when beliefs compete. Although the jury may still be out on whether first products do better, first ideas may indeed matter more.

TABLE 1: CONTENT ANALYSIS OF MAINSTREAM MEDIA AND ACADEMIC PRESS:
ABSOLUTE AND RELATIVE APPEARANCE (STUDY 1A)

Absolute number of mentions of:	Mainstream Media		Academic Press	
	Top 50 newspapers	Business publications	ABI Inform	JSTOR
First Mover	159	150	40	226
First Mover Advantage	107	91	10	70
Second Mover	3	4	0	16
Second Mover advantage	1	0	0	3
Pioneering Advantage	0	0	9	23
Number of articles in database	16660892	893829	498344	44645
Relative number of mentions:				
First Mover per 1 million articles	9.5	167.8	80.3	5062.2
First Mover Advantage as percentage of First Mover	67%	61%	25%	31%
Pioneering Advantage as percentage of First Mover Advantage	0%	0%	90%	33%

TABLE 2: CONTENT ANALYSIS OF MAINSTREAM MEDIA: RATE OF APPEARANCE OVER TIME (STUDY 1A)

	Rate per 100,000 articles				Period to period percentage increase		
	A) 85-89	B) 90-94	C) 95-99	D) 00-02	A to B	B to C	C to D
Business publications							
First mover	0.4	0.8	19.9	91.1	194	2577	457
First mover advantage	0.0	0.4	11.2	58.2		2905	519
Second mover	0.0	0.0	0.4	2.7			756
Fast follower	0.0	0.0	1.4	3.4			236
Rapid responder	0.0	0.0	0.0	0.7			
Top 50 newspapers							
First mover	0.1	0.1	0.6	3.4	111	345	470
First mover advantage	0.0	0.0	0.4	2.4		1877	530
Second mover	0.0	0.0	0.0	0.0			218
Fast follower	0.0	0.0	0.0	0.1		-24	695
Rapid responder	0.0	0.0	0.0	0.0			-100

Note. Business publications are Barrons, Business Week, Forbes, Fortune, Wall Street Journal. To avoid double-counting, the Wall Street Journal was excluded from its normal position in the top 50 newspapers category.

TABLE 3: PROFITABILITY RATINGS AND MARKET SHARE ESTIMATES AS A FUNCTION OF PRIMING CULTURE (STUDIES 2A AND 2B)

Prime	N	Market Share Rating	Profitability Rating	Percent Units Estimate	Percent Profit Estimate
Study 2A: Priming Culture (USA)					
American culture	40	2.63 (1.92)	1.95 (1.97)	68.45 (8.63)	67.83 (11.42)
Chinese culture	50	1.60 (2.60)	0.80 (2.79)	63.30 (10.83)	62.46 (12.77)
Control group	38	2.21 (2.18)	1.21 (2.20)	60.16 (12.06)	59.18 (12.92)
Study 2B: China versus USA					
Chinese	59	0.95 (2.63)	-0.29 (2.98)	61.49 (11.74)	59.63 (13.13)
American	55	1.25 (2.52)	1.00 (2.13)	66.15 (10.92)	64.69 (12.51)

Note: Higher numbers favor the first mover. Means in bold are significantly different from midpoint (0 for firm rating and 50 for market share)

TABLE 4: SUCCESS RATINGS AND MARKET SHARE ESTIMATES AS A FUNCTION OF GENERATED AND PRESENTED EXEMPLARS (STUDIES 3A AND 3B)

	N	Success rating	Market share
Study 3A: Generated Exemplars			
Disadvantage	25	0.64 (2.08)	62.6 (18.5)
Advantage	28	1.07 (2.09)	58.6 (18.4)
Control group	32	1.09 (1.89)	60.5 (17.7)
Study 3B: Presented Exemplar			
Disadvantage	33	0.48 (1.75)	57.1 (13.5)
Advantage	29	1.41 (1.45)	63.3 (13.4)
Control Group	32	1.09 (1.87)	61.7 (14.2)

Note: Higher numbers favor the first mover. Means in bold are significantly different from mid-point (0 for firm rating and 50 for market share)

TABLE 5: PROFITABILITY RATINGS, PERCENT PROFIT ESTIMATES, AND COVARIATE COEFFICIENTS AS A FUNCTION OF CONDITION (STUDY 4)

Exemplar/ Reasons	Dis/Advantage	N	Profitability Rating	Percent Profit Estimate	Coefficient of Ease of Generation for Profitability	Coefficient of Ease of Generation for Percent Profit
Exemplar	Advantage	29	5.10 (1.51)	61.45 (12.60)	-0.02 (0.18)	-0.94 (1.56)
Exemplar	Disadvantage	30	5.18 (1.61)	58.79 (15.46)	-0.33 (0.16)	-2.69 (1.35)
Reasons	Advantage	31	5.24 (1.33)	59.71 (11.74)	-0.31 (0.19)	-1.65 (1.65)
Reasons	Disadvantage	28	4.55 (1.86)	55.00 (13.72)	0.13 (0.17)	1.32 (1.46)

Note: Means in bold are significantly different from midpoint (0 for profitability rating and 50 for percent profit estimate) at $p < .05$. Coefficients in bold are non-zero at $p < .05$.

TABLE 6: AGREEMENT AND SUCCESS RATINGS, PROFIT ESTIMATES, AND INVESTMENT DECISIONS AS A FUNCTION OF GENERATED EXEMPLARS IN A PROFESSIONAL SAMPLE (STUDY 6)

Generated Exemplars	N	Agreement Rating	Success Rating	Percent Profit	Investment (in First Mover)
Disadvantage	17	0.53 (1.91)	0.53 (1.66)	5.59 (19.75)	9 (52.9%)
Advantage	18	0.44 (1.42)	0.28 (1.74)	7.78 (18.88)	12 (66.7%)
Both	15	1.07 (1.75)	0.93 (1.58)	12.33 (11.63)	13 (86.7%)
Control Group	35	0.91 (2.23)	1.40 (1.24)	9.17 (10.27)	30 (85.7%)

Note: Higher numbers favor the first mover. Means in bold are significantly different from mid-point (0 for ratings and 50 for percent profit). The imbalance in cell sizes is due to a programming error where data was lost from a portion of participants who were asked to generate exemplars.

FIGURE 1: CONTENT ANALYSIS OF BUSINESS PRESS: RELATIVE APPEARANCE OF BUSINESS CONCEPTS (STUDY 1A)

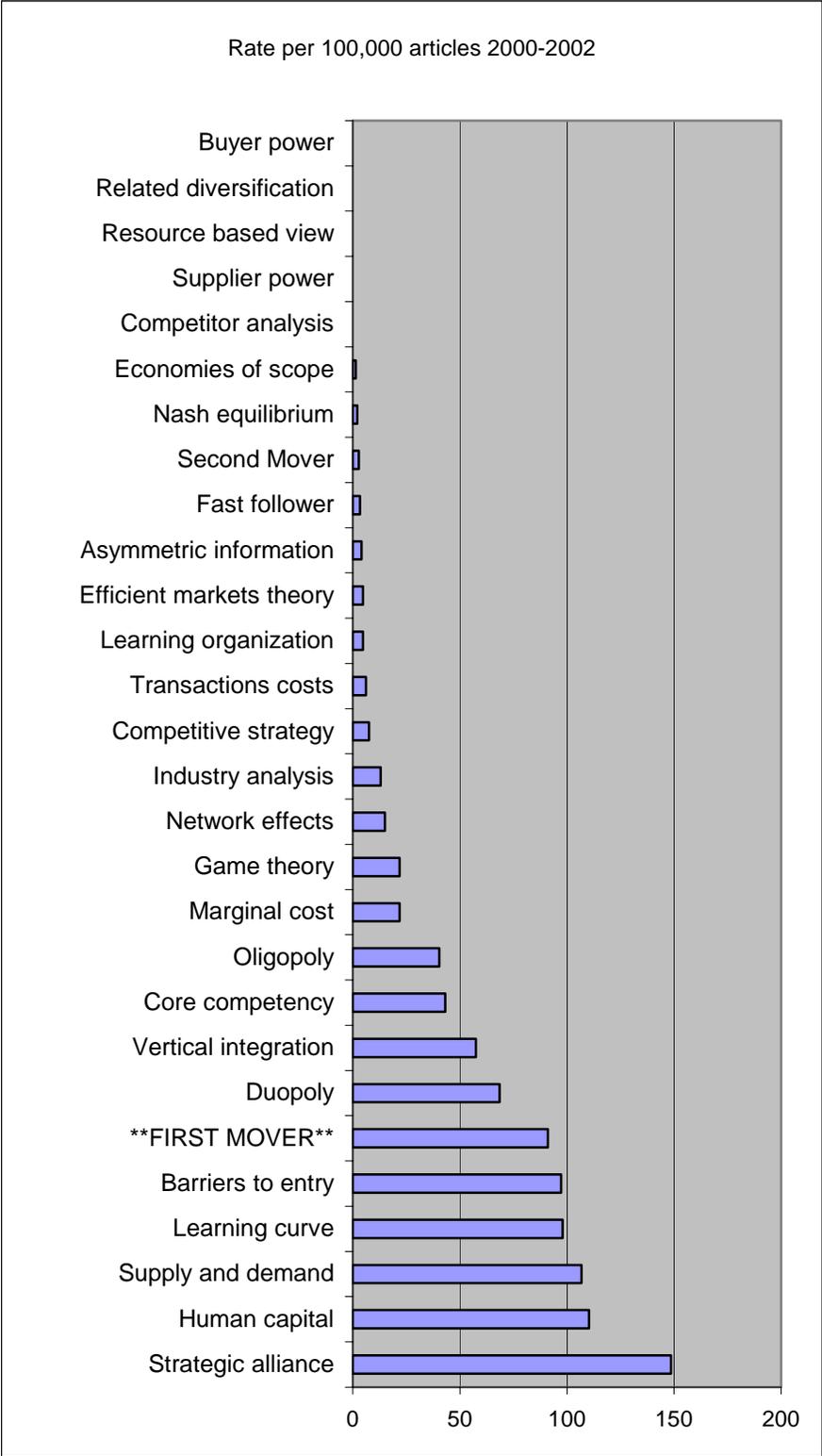
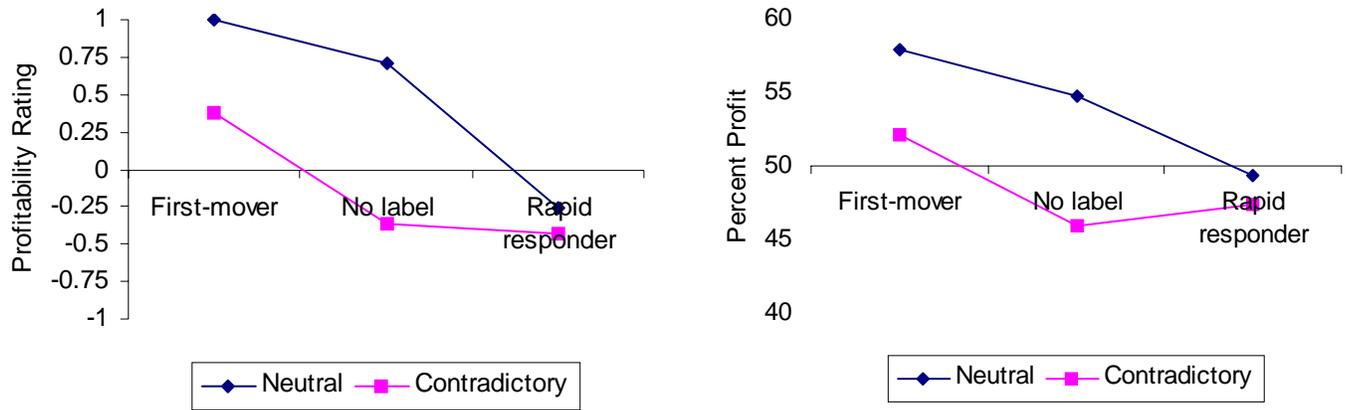


FIGURE 2: PROFITABILITY RATINGS AND PERCENT PROFIT ESTIMATES AS A FUNCTION OF LABEL AND INFORMATION (STUDY 5)



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