



2015

# Out of the Building, into the Fire: An Analysis of Cognitive Biases during Entrepreneurial Interviews

Tianxu Chen

Oakland University, [tchen234@oakland.edu](mailto:tchen234@oakland.edu)

Mark Simon, Ph.D.

Oakland University, [simon@oakland.edu](mailto:simon@oakland.edu)

John Kim

Oakland University, [kim@oakland.edu](mailto:kim@oakland.edu)

Brian Poploskie

Oakland University, [poploskie@oakland.edu](mailto:poploskie@oakland.edu)

Follow this and additional works at: <http://digitalcommons.sacredheart.edu/neje>



Part of the [Entrepreneurial and Small Business Operations Commons](#), and the [Marketing Commons](#)

## Recommended Citation

Chen, Tianxu; Simon, Ph.D., Mark; Kim, John; and Poploskie, Brian (2015) "Out of the Building, into the Fire: An Analysis of Cognitive Biases during Entrepreneurial Interviews," *New England Journal of Entrepreneurship*: Vol. 18: No. 1, Article 5.

Available at: <http://digitalcommons.sacredheart.edu/neje/vol18/iss1/5>

This Refereed Article is brought to you for free and open access by the Jack Welch College of Business at DigitalCommons@SHU. It has been accepted for inclusion in New England Journal of Entrepreneurship by an authorized administrator of DigitalCommons@SHU. For more information, please contact [ferribyp@sacredheart.edu](mailto:ferribyp@sacredheart.edu).

# Out of the Building, into the Fire: An Analysis of Cognitive Biases during Entrepreneurial Interviews

Tianxu Chen  
Mark Simon  
John Kim  
Brian Poploskie

**A** major source of failure for new ventures is the entrepreneurs' misunderstanding of the product-market fit. Recently, researchers have suggested that to get a better understanding of the product-market fit, entrepreneurs should "get out of the building" and interview many customers. This approach, while advantageous, is not without drawbacks. This article presents a conceptual model that incorporates the characteristics of "getting out of the building" to conduct customer interviews, and the biases that can arise to influence the entrepreneurs' misjudgment of the product-market fit. We provide recommendations to overcome these biases.

**Keywords:** biases; interview; entrepreneur; product-market fit; opportunity identification

Virtually every study of product success has confirmed the positive relationship between understanding customers' needs and new product performance (Bharadwaj, Nevin, and Wallman, 2012). Cooper (1979) goes so far as to state that the failure to understand customer needs "spells disaster." The relationship between business success and understanding the market is especially important for startups. Indeed, entrepreneurs often target new markets with innovative technologies and novel business ideas (Navis and Glynn, 2010). In spite of the opportunities associated with this strategy, they face two fundamental changes. First, the market spaces that they choose to enter are often "untested and incompletely understood" (Navis and Glynn, 2010; Tushman and Anderson, 1986: 444); in such markets, customers' needs and preferences are often characteristically ambiguous (Navis and Glynn, 2010). Second, entrepreneurs in general lack knowledge about the markets for their products and often are unable to produce outputs that satisfy customer needs, thereby having a high possibility of dissolution (Stuart, Ha, and Hybels, 1999). As a result, developing reliable means to understand the product-market fit becomes the forefront in the strategy of entrepreneurial firms (Blank, 2013).

Yet, venture founders often fail to understand the market correctly, resulting in the demise of their startups (Bhide, 1994; Gruner and Homburg, 2000).

Some (e.g., Bhide, 1994; Blank, 2013; Sykes and Dunham, 1995) suggest that this deficiency stems from how entrepreneurs investigate ideas. Traditionally, entrepreneurs engage in extensive up-front planning, in which they describe the target market, develop a comprehensive distribution strategy, and lay out five years of financial projections. They tend to rely primarily on secondary data and/or survey responses, operating in a "stealth mode" by keeping their ideas carefully hidden (Blank, 2013). These techniques, however, do not generate a deep understanding of customer needs (Daghfous, Ashill, and Rod, 2013) and, at best, serve as rough surrogates for personal interactions with the customers (Gorry and Westbrook, 2011). As a result, entrepreneurs may develop incorrect assumptions about customers, miss opportunities, and lock their startups onto a fatal path (Bhide, 1994).

In response, authors (e.g., Blank, 2013; Ries, 2011) have introduced a host of new methodologies whereby managers directly hear the voice of the customer (VOC). VOC refers to "a complete set of customer wants and needs, expressed in the customer's own language, organized the way the customer thinks about, uses, and interacts with the product . . . and prioritized by the customer in terms of both importance and performance . . . [in relation to] existing alternatives" (Bharadwaj et al., 2012; Katz, 2002: 170). An effective way to capture VOC is to interview customers (Bharadwaj et al., 2012). Such interviews are particularly useful for entrepreneurs because they focus on customer needs and problems, occur early and often, and take place in the customers' natural environments. Indeed, leading institutions of higher education, such as Babson, Harvard, Stanford, Darden, University of Michigan, and dozens more now stress the technique (Blank, 2013). Authors of bestselling entrepreneurship books suggest the VOC can be captured by getting "out of the building" to talk to potential purchasers (Blank, 2013; Ries, 2011). The process centers on

gathering real, actionable, and timely data, and often generates more than 100 interviews within a few months (Blank, 2013). Indeed, more than 100 entrepreneurship groups in dozens of countries, often comprised of thousands of members, have begun stressing the importance of the interview.

These interviews, however, can potentially generate major judgment errors (e.g., Adams and Hublikar, 2010; Bharadwaj et al., 2012; Cooper, Edgett, and Kleinschmidt, 2004; Cooper and Dreher, 2010) and such errors are compounded if the interviews are conducted by entrepreneurs. Indeed, research has shown that entrepreneurs tend to have greater cognitive biases than nonentrepreneurs (Busenitz and Barney, 1997; Keh, Der Foo, and Boon, 2002; Simon and Houghton, 1999). For example, Busenitz and Barney (1997) found entrepreneurs have a higher degree of overconfidence than managers do. Krueger and Brazeal (1994) provided evidence that entrepreneurs have higher illusion of control and tend to overlook real obstacles. These biases frequently arise in assessing markets (Mattei and Hellebusch 2006), deciding to launch a venture (Simon and Houghton, 1999; Simon, Houghton, and Aquino, 2000), and identifying opportunities (Keh et al, 2002), the exact situations startups face. The judgment errors associated with these cognitive biases may lead to inaccurate understanding of product-market fit in face-to-face interviews, resulting in less rational, less comprehensive decision making.

In this article, we offer a theoretical framework about the antecedents of potential cognitive biases that may arise in face-to-face interviews and the role it plays in the judgment of product-market fit. Product-market fit is defined as being in a good market with a product that can satisfy that market (Andreessen, 2007), and is not a typical outcome variable examined in the entrepreneurial cognition research. However, recent lean startup movement has emphasized the importance of product-market fit in the success of a new startup (Blank, 2013). Andreessen (2007) suggests that all successful startups are the ones that have reached product-market fit, and getting to product-market fit should be the ultimate goal of a startup. Blank (2013) also echoes this sentiment in his lean startup model. He argues that entrepreneurs should first engage in customer discover interviews to isolate customer needs and then conduct customer validation interviews to determine that the proposed product will meet those needs. He further explains that the goal of both of these steps is to achieve better product-market fit. Product-market fit, which is not a typical outcome variable in entrepreneurial cognitive research, should be studied, and may provide a valuable contribution to the

entrepreneurial cognitive research literature. In fact, not achieving product-market fit may be the primary reason why new ventures have poor performance and even fail (Blank, 2013).

Our theoretical model, drawing on the information processing theory (Pech and Cameron, 2006), examines how the way entrepreneurs gather information may influence the cognitive biases arising in face-to-face interviews. Indeed, while cognitive biases may exist in different forms, their presence, magnitude, and consequences may be a function of the way entrepreneurs obtain information (Simon and Houghton, 2002; Zacharakis and Shepherd, 2001). Given this, many scholars have called for research focusing on how best to conduct the interview process (e.g., Adams and Hublikar, 2010; Cooper et al., 2004; Gorry and Westbrook, 2011; Harmancioglu, Grinstein, and Goldman, 2010).

Our article contributes to the literature and managerial practice by answering these calls. First, we strive to identify which biases, including ones not previously discussed in the entrepreneurship literature, are likely to be exhibited by entrepreneurs during interviews, the underlying theoretical mechanisms, and the strategies to manage these biases. Second, we believe that the article also contributes to the literature on entrepreneurial cognition. While several papers have suggested that entrepreneurial environments, in general, lead entrepreneurs to exhibit cognitive biases (Busenitz and Barney, 1997), it is rare that a research on entrepreneurship takes a finer grain approach by suggesting specific characteristics that are associated with specific biases. Thirdly, the paper makes a contribution to theory by relating biases to an important and growing entrepreneurial practice, namely interviewing large numbers of individuals. Finally, the article's propositions contribute to the emerging research on VOC.

This article proceeds as follows: we first offer an overview of the theory that grounds our research model. We then introduce our propositions based on our theoretical framework, followed by a few recommendations to tackle the challenges associated with interviews. We conclude our article by revisiting the key takeaways of this research and directions for future research.

## Theoretical Framework

### *Information Processing Theory and Diagnostic Cues*

We use information processing theory, the dominant paradigm within cognitive psychology (Pech and Cameron, 2006), to explore the method by which entrepreneurs gather information that may influence

the cognitive biases arising in face-to-face interviews. The fundamental assumption underlying the theory is that individuals have limited ability to process information. Examining information processing as it relates to entrepreneurship is particularly relevant because it helps explain how individuals identify and evaluate opportunities (Pech and Cameron, 2006) and is one of the major factors that differentiate entrepreneurs from managers (Kaish and Gilad, 1991). As explained by Mitchell et al. (2004), examining how information processing relates to these issues is crucial to advancing the entrepreneurship field. This has led Singh and Ronch (2011) to assert that understanding how entrepreneurs process information may help to unlock important aspects of new venture creation.

An inherent component of information processing theory relates to the processing of diagnostic cues in order to make decisions (Simon and Houghton, 2003). Diagnostic cues are indicators that are present, given one outcome, and absent given the alternative outcome (Juslin, 1994). For example, an entrepreneur may grow more convinced that he or she should launch a certain product if potential customers state they would buy the product (the diagnostic cue). In other words, individuals start with initial beliefs, but then update those beliefs based on cues they receive from the environment (Paul and Lancaster, 2007).

But, individuals do not always process cues objectively. Instead the cues are “filtered” by the decision environment, which includes factors such as type of cues, amount of cues, and the complexity of the cues. These conditions affect whether cues are noticed, how they are interpreted, and the extent to which they are incorporated into one’s judgments (Felicio, Caldeirinha, and Rodrigues, 2012). As such, decision environment has a major influence on the effectiveness and efficiency of decision making (Salmon, 2013).

While the role of decision environment in processing cues could actually yield superior results (Busenitz and Barney, 1997), this is often not the case (Simon and Houghton, 2002). Decision environment can lead individuals to utilize cues incorrectly in three ways. First, it may lead to using an irrelevant cue. Individuals may treat cues that are not relevant to the decision as though they are relevant (Juslin, 1994). In this instance, entrepreneurs may act on cues that they believe are associated with success, but, which in actuality, are not (Simon and Houghton, 2002). Second, entrepreneurs may place too much weight on relevant cues (Pech and Cameron, 2006). To clarify this concept, we provide the following hypothetical example. In certain decision en-

vironments, an entrepreneur might conclude that his or her product idea can be successful because he or she interviewed a hundred people (the population) and believes that the majority of them indicated they would use the product (the cue). However, less than 10 percent of the interviewees may have made such a statement. A third and final diagnostic error could occur when individuals underestimate the diagnostic value of a given cue (Nisbett, Zukier, and Lemley, 1981). They may believe that few individuals indicated they would use their product, when in reality many did.

Importantly, extensive literature has indicated that this misuse of cues can lead individuals to employ specific cognitive biases (Åstebro and Elhedhli, 2006; Busenitz and Barney, 1997). For example (Simon et al., 2000), when faced with far more cues than they can manage, individuals may exhibit the availability bias by only using those they can most easily recall (Pech and Cameron, 2006). Similarly, when one encounters two contradictory cues, such as a qualitative assertion by one person versus quantitative statistical evidence summarizing findings from many people, he or she is more likely to use the qualitative cue over the quantitative one (Keh et al., 2002).

To summarize, the paragraph above suggests that the decision environment may lead to the misapplication of cues, which in turn, may lead to cognitive biases. Following this logic, we will develop eight propositions that examine how the characteristic associated with interviewing (the decision environment) may help predict which biases an entrepreneur may exhibit, and what might be done to minimize the reliance on cognitive biases.

### ***Information Search Characteristics and Biases***

The philosophy of “getting out of the building” and interviewing potential customers opens up the opportunity for entrepreneurs to obtain informational cues to enrich their decision environment. However, the way these cues are processed represents an opportunity and a challenge. Indeed, conducting early interviews may become the dominant method for starting ventures to understand their customers (Blank, 2013). Such interviews may have a greater impact on product success than any other single product introduction practice (Adams and Hublikar, 2010), and are one of the strongest factors that separate the best and worst performers (Cooper et al., 2004). In particular, the interviewer obtains concrete information that is rich in contextual detail, which allows him or her to assess better the product-market fit (Kardes, Cronley, and Kim, 2006; Trope and Liberman, 2003). More specifically, the rich, bi-

directional communication facilitates the transfer of complex ideas (Daghfous et al., 2013), which can lead to promising startups (Peters and Brush, 1996).

While startups can accumulate rich, factual, actionable, and timely data through interviews, such an enriched decision environment may be associated with a variety of cues that increases the complexity of decision making. Under such circumstances, cognitive biases are likely to arise as “filtering” mechanisms (Busenitz and Barney, 1997; Forbes 2005). The cognitive biases may lead the entrepreneur to make errors in judgment (Barnes, 1984; Simon and Houghton, 2002; Simon et al., 2000). The biases may occur because of how the interviews are executed, and also because of the characteristics of the interviewing process. Figure 1 represents a model of the entrepreneurial interviewing process, and the biases that may result from the process. As the model illustrates, information search characteristics inherent in the interviewing process may lead to biases and may result in erroneous judgments. The four search characteristics are (1) interviews that are conducted face-to-face; (2) interviews that are conducted sequentially; (3) interviews where large numbers of people are interviewed; and (4) interviews that are conducted by entrepreneurs. In the following section, we develop propositions related to each of these search characteristics.

## Proposition Development

### Face-to-Face Interviews

Entrepreneurs are encouraged to “get off the building” and interview customers directly. Face-to-face interviews provide concrete information versus an abstract representation from reports and secondary data (Kardes et al., 2006). The concrete and firsthand information allows the entrepreneur to garner more accurate and detailed information that may be beneficial in making a judgment of product-market fit. For instance, the entrepreneur may read a survey report suggesting that customers like the potential product. However, by interviewing customers face-to-face, the entrepreneur can better determine the product-market fit because he or she not only hears what is said but how it is said (e.g., the extent to which the customer was enthusiastic and animated). Thus, the face-to-face interview allows for not only cognitive responses, but affective and behavioral responses as well (Breckler, 1984). Therefore, conducting face-to-face interviews may lead to biases that may result in suboptimal judgments. The three potential biases are the (1) saliency effect, (2) vividness effect, and (3) reasoning by analogy.

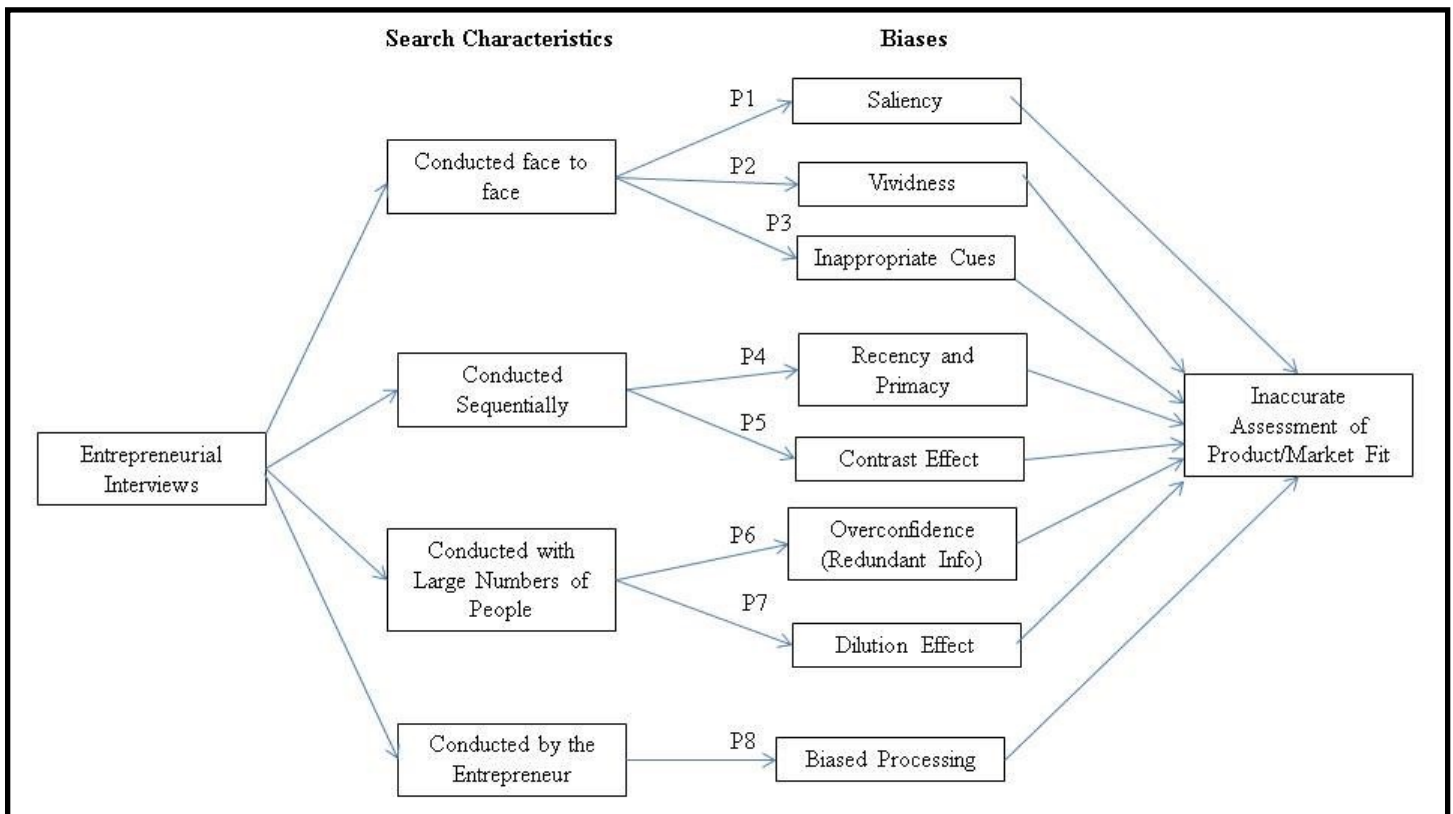


Figure 1. Information Search Characteristics and Biases

**Saliency Effect.** In conducting the face-to-face interview, the entrepreneur is collecting information to make a judgment regarding the product-market fit. Certain interviews may stand out because a particular interviewee may be very different from others. For example, the interviewee may be attractive, have a tattooed face, be humorous, or have a handicap that distinguishes him or her from others. In such case, the entrepreneur believes the cue provides great insight, even though it does not. More specifically, the information from the interview may become more salient and hence more readily accessible from memory. Although the information may not have greater probative value, the accessible information may be more likely to be used to form judgments (Herr, Kardes and Kim, 1991). Thus:

**Proposition 1:** The more salient the characteristics of interviewees, the higher the likelihood that the entrepreneur will form inaccurate judgments about the product-market fit.

**Vividness Effect.** Saliency effect occurs because of the contrast with other interviewees, but vivid information is context free (Nisbett and Ross, 1980). Vividness effect may occur because the information may be emotionally interesting or image provoking. For example, in the interview process, the interviewee may provide an emotional or interesting anecdote. Given that it is anecdotal evidence, the information may be specific to that one person and may not be informative. However, because that information is interesting or evokes emotion, it is more accessible from memory and will have a greater effect on the entrepreneur's judgments (Herr et al., 1991; Kisielius and Sternthal, 1984). *In this way, the diagnostic cues stemming from this interview may influence judgment to a disproportional amount.* Thus:

**Proposition 2:** The more emotional or interesting the interviewees, the higher the likelihood that the entrepreneur will form inaccurate judgments about the product-market fit.

**Reasoning by Analogy.** Whereas the vividness effects may lead an entrepreneur to give too much weight to a valid cue, if an entrepreneur reasons by analogy, he or she may give weight to a cue that is not valid. In forming judgments, entrepreneurs tend to use reasoning by analogy (Simon and Houghton 2002; Stumpf and Dunbar, 1991). Reasoning by analogy is the process whereby an entrepreneur uses a recognizable cue and makes simple analogies to get a better sense of the interview information. This can be especially true in a face-to-face interview where

there are many vivid and salient cues that can be used to generate simple analogies. However, face-to-face interviews may also lead to greater errors in reasoning by analogy because the vivid and salient cues may be inappropriate and not directly related in this context (Gilovich, 1981; Haley and Stumpf, 1989). Analogies are often dramatic, suggesting they will be readily recalled. However, almost by definition, they are overly simplistic and apply to a slightly different context. For example, a potential customer may mention he or she was an early adopter of an I-phone because it had a nice appearance. The entrepreneur may become unduly encouraged by this cue believing his or her situation is analogous because he or she is also offering a product that looks nice. However, the success of the I-phone may have stemmed from many other factors, such as Apple's reputation for innovation or the company's large investment in marketing. Thus:

**Proposition 3:** In face-to-face interviews, inappropriate cues may be used by the entrepreneur in reasoning by analogy, and information from interviews involving analogy may be disproportionately weighed to form inaccurate judgments about the product-market fit.

### ***Interviews Conducted Sequentially***

In interviewing customers, the entrepreneur usually conducts the interviews individually to generate fruitful insights into customer needs and problems (Kahn, 1990; Roller, 1987). This allows the entrepreneur to assess better the product-market fit. However, conducting individual interviews means that the entrepreneur must conduct the interviews sequentially. The sequential interview process may lead to biases that result in suboptimal judgments and wrong decisions. The two potential biases are (1) the primacy and recency effect and (2) contrast effect.

**Primacy and Recency Effect.** The sequential interview process means that the entrepreneur interviews customers in order, and studies have shown that order has an effect on judgment (e.g., Anderson, 1965; Hovland, 1957; Miller and Campbell, 1959). The order effect has been labeled the primacy and recency effect. The primacy and recency effect occurs because the initial and the most recent information have the greatest effect on judgment since they are easier to remember (Miller and Campbell, 1959). This means that *cues contained in the earlier and later interviews conducted by the entrepreneur will have a greater effect on the evaluation of the*

product-market fit, despite the fact that the information from these interviews may have less of a probative value. Thus:

**Proposition 4:** In interviewing customers sequentially, earlier and later interviews will have a greater effect on the entrepreneur's judgments and may lead to an inaccurate assessment of the product-market fit.

**Contrast Effect.** The sequential interview process may also lead to the contrast effect. Judgments are not made in isolation but in relation to a context, and contrast effect occurs when judgments are shifted away from the contextual reference point (Kenrick and Gutierrez, 1980; Brickman, Coates, and Janoff-Bulman, 1978). For example, 50 degrees Fahrenheit in February feels warm, while in August it feels cold. Thus, the context can affect peoples' judgment. In the situation of the entrepreneur conducting a sequential interview, an interviewee may be very negative about the product while others are mildly positive. The entrepreneur, by focusing on the very negative evaluation, or *cue*, and using it as the reference point, may perceive the mildly positive evaluation as extremely positive. *This suggests that the entrepreneur's interpretation of the cue may not always be accurate. More specifically,* the overestimation of the mildly positive evaluation may lead the entrepreneur to form an inaccurate assessment of a product-market fit. Thus:

**Proposition 5:** In interviewing customers sequentially, an extreme interview may be used as a reference point and influence the entrepreneur's perception of other interviews, leading to an inaccurate assessment of the product-market fit.

### **Interviewing Large Numbers of Customers**

Proponents of interviewing (e.g., Blank, 2013) suggest speaking with a large number of customers, so the entrepreneur can obtain a substantial amount of information and increase the accuracy of the information. Although interviewing a large number of customers is a good idea, it leads to unwanted consequences if the entrepreneur is not attentive. It may result in (1) overconfidence and (2) dilution effect.

**Overconfidence.** Accuracy of information can be assumed if many customers provide the same information. It allows for the possibility of triangulation, convergence, and overall corroboration in determining product-market decisions. However, if the interviewing procedure results in interviews of customers

that are associated (e.g., the interview takes place in the office of one company), the entrepreneur may have redundant information. The redundancy of information means the information is correlated. The consequence of the correlated information is that the entrepreneur, in reality, is not receiving new independent information, and the accuracy of the information may be limited. In other words, the entrepreneur may treat two cues as though each has distinct diagnostic value when they do not. This may lead to overconfidence.

Overconfidence is the overestimation of the certainty of information (Simon and Houghton, 2003). Thus, overconfidence is the degree of confidence in relation to the accuracy of the information, and may lead to errors in judgment (Hayward, Shepherd, and Griffin, 2006). If the interviews are from customers who are associated, the redundant information increases the certainty but not the accuracy of the information (Oskamp, 1965). In this case, the entrepreneur becomes overconfident, and judgments about product-market fit may be incorrect. Thus:

**Proposition 6:** Large numbers of interviews targeting customers that are related may introduce redundant information, leading to the entrepreneur's overconfidence, thereby resulting in the entrepreneur's inaccurate assessment of the product-market fit.

**Dilution Effect.** The goal of interviewing customers is to acquire relevant (i.e., diagnostic) information to assess product-market fit. However, not all information is the same in diagnostic value (Herr et al., 1991; Kardes, Kim, and Lim, 1994). Although diagnostic information is critical in forming judgments, nondiagnostic/irrelevant information is useless and should not be used.

When conducting large numbers of interviews, the entrepreneur is collecting large amounts of information. Some information may be diagnostic and some may not. The use of diagnostic information results in an accurate judgment about the product-market fit. However, when faced with large amounts of information, the entrepreneur may try to use all information to make the judgment. However, the mere presence of nondiagnostic information will reduce the effect of the diagnostic information (Nisbett et al., 1981). For example, hypothetically in the interviews, the entrepreneur discovered that, on average, older customers found the product more attractive. The entrepreneur also found that people who liked the product slept on average eight hours a day, and liked to watch the television program *Swamp People*. The information about how much they sleep and what show they watch may be irrelevant,

and if so, should have no bearing on the product-market judgment. However, the entrepreneur may try to overprocess all the information and the effect of the diagnostic information (older customer) may receive less weight in the product-market fit judgment. In other words, valid cues may be “lost.” Thus:

**Proposition 7:** Conducting a large number of interviews may lead to nondiagnostic information, which in turn, may reduce the effect of diagnostic information, resulting in an inaccurate assessment of product-market fit.

### *Interviews Conducted by Entrepreneur*

An advantage of having entrepreneurs conduct the interviews is that they get firsthand information that is not filtered. The information is not based on the assumptions, perceptions, or guesstimates of others. However, being personally involved may also have a negative ramification, giving rise to suboptimal judgments due to biased processing. Biased processing, in this case, refers to the tendency to view information positively and ignore disconfirming evidence.

**Biased processing.** Biased processing deals with what and how information is processed and interpreted to form a judgment. The entrepreneur exploring a startup opportunity is likely to overestimate its strengths (Palich and Bagby, 1995), underestimate its weaknesses (Palich and Bagby, 1995), and perceive little risk (Simon et al., 2000). More problematic is the especially strong tendency of entrepreneurs to fail to adjust their beliefs based on feedback (Åstebro, Jeffrey, and Adomdza, 2007; Parker, 2006). This suggests that entrepreneurs may emphasize interview information that is consistent with their initial optimistic conclusions, while ignoring information that is inconsistent with them (Posavac, Kardes, and Brakus, 2010; Lee, Acito, and Day, 1987; Lord, Ross, and Lepper 1979; Sanbonmatsu, Posavac, Kardes, and Mantel, 1998). For example, the entrepreneur may believe that a certain market fits well with the product. By holding this belief, he or she will only look for interview information that will support that belief. Furthermore, interview information that provides weak support for that belief may be interpreted as strong support. The entrepreneur becomes confident, and

may conclude that he or she was right all along in that the product is a good fit for that market.

The above discussion suggests that entrepreneurs will make several errors related to processing cues. They might notice a disproportionately large number of positive cues and a disproportionately small number of negative cues. Furthermore, entrepreneurs are likely to misinterpret negative or neutral cues as positive. Thus:

**Proposition 8:** By personally conducting interviews, entrepreneurs may process and interpret interview information that supports their personal beliefs, resulting in an inaccurate assessment of the product-market fit.

### **Discussion**

The approach of “get out of the building and interview real customers” constitutes sound advice with many positive advantages. The entrepreneur can acquire real, actionable, and timely data. However, it is also not without problems. The interviewing process may lead to biases that adversely influence the quality of a judgment. If the entrepreneur is not cognizant of these biases when interviewing customers, bad judgments may transpire and lead to wrong decisions. Thus, entrepreneurs should follow certain procedures in the interviewing process to reduce biases. Especially, entrepreneurs are more susceptible to cognitive biases than others (Busenitz and Barney, 1997; Forbes 2005) and therefore, the interviews conducted by them may be particularly prone to certain biases. They can, however, reduce these by following a few recommendations (Table 1).

**Table 1. Cognitive Biases and Recommendations**

| Search Characteristics  | Biases   | Recommendations   |
|-------------------------|--|---|
| Conducted Face-to-Face  | <i>Saliency Effect</i><br><i>Vividness Effect</i><br><i>Reasoning by Analogy</i> | Minimize impact of irrelevant information; weigh equally the information provided by interviewees; avoid judgment based on appearances; audio-tape interviews |
| Conducted Sequentially  | <i>Primacy and Recency Effect</i><br><i>Contrast Effect</i>                      | Review interviews in random order   |
| Large Numbers of People | <i>Overconfidence</i><br><i>Dilution Effect</i>                                  | Interviews are from different people who are not associated; review audio-tape interviews   |
| Entrepreneur Conducts   | <i>Biased Processing</i>   | Understand the interview is to explore, not to validate   |



Judgment errors might occur due to the *saliency* or *vividness* effects, and/or the tendency to make irrelevant associations. Therefore, it is critical that the entrepreneur should minimize the attention paid to irrelevant information. Information provided by interviewees who demonstrate higher levels of saliency or vividness should be given the same weight as the information provided by other interviewees, and the entrepreneur should also avoid judging the quality of the interviewees' opinions based on their appearances. One effective tool to accomplish this is audio-taping the interviews. Furthermore, the entrepreneur should review the interviews in random order to reduce the *recency* and *contrast* biases. Because these biases are caused by the order in which the entrepreneur conducts interviews, randomization can minimize memory issues.

The entrepreneur should also make sure that interviews are from different customers who are not associated. If related customers provide the same information, the information may be redundant. Research on the knowledge-based view indicates that knowledge redundancy undermines the chance to incorporate diverse perspectives and reduces the likelihood of creating radical innovation (Makri, Hitt, and Lane, 2010). Extending this idea to interviews about product-market fit, one may expect that interviews conducted in a homogeneous customer group might be less valuable because similar information might be repeatedly reported. Conclusions about the product-market fit could sometimes be misleading if the product is targeted to a broader range of customers. By contrast, if the entrepreneur involves diverse groups of customers in the interviews, he or she will have the opportunity to see different customer needs and incorporate different opinions about the product-market fit. The interviews may therefore generate more insightful discoveries and may be more easily generalized.

Bringing multiple individuals into the decision making, and using processes such as devil's advocacy, may be especially effective (Schweiger, Sandberg, and Ragan, 1986). Devil's advocacy occurs when someone takes a position, even if he or she does not believe it, that opposes someone else's conclusion. Those advocating the approach believe that the subsequent debate will generate better insight. Also, Winkler and Poses (1993) suggested that individuals may limit their own biases by writing down all the reasons supporting their prediction and all the reasons disconfirming it.

Finally, the entrepreneur must keep reminding himself that the goal of the interview is to explore, not validate. The process of validation, in nature, is often confirmatory, rather than exploratory; that is, when an entrepreneur focuses on validation, he or

she often tries to seek out information indicating a link that is believed to exist, rather than to explore the unknown. Thus, if an interview is geared toward validation, the entrepreneur typically has already established causal reasoning about the product-market fit. This could lead, consciously or subconsciously, to focusing on information that confirms the initial hypothesis, and ignoring information that refutes it. This selective inclusion and exclusion of information may constrain the entrepreneur's opportunity to incorporate new insights, thus limiting the discovery power of the interview. Indeed, entrepreneurship research has highlighted that new ventures have a competitive advantage because they have less inertia, more innovative ideas, and a greater ability to see opportunities (Simon and Houghton, 2002). As a result, the entrepreneur must always keep an open mind in the interview to maximize knowledge acquisition. One particularly effective technique may be to focus initially only on objectively observing customer problems, and only afterwards, trying to solve them by developing a product or service (Blank, 2013).

## Limitations and Conclusions

We acknowledge a limitation of our research. We have not parceled out all the possible nuances of the complex web of relationships related to characteristics of decision-making contexts and cognitive biases. This would be particularly difficult given that biases, while distinct, are often closely related to subtle differences in mechanisms, which may lead to exhibition of one bias versus another (Hogarth, 1987). As Whetten's (1989) noted, "[It is] unfair to expect that theorist be sensitive to all possible boundary constraints ... in the absence of experimental evidence, we must be realistic regarding the extent of a theorist foreknowledge." Given the relatively new research attention on the intersection of interviewing, entrepreneurship, and product-market fit, we believe that this investigation may serve as a valuable first step toward unraveling all the nuances of the relationships. We fully recognize, however, that this article is not an ending point, but hope it provides a valuable springboard for those who follow.

There are several directions for future research related to this article that could advance the field. First, scholars should empirically test the paper's propositions. Second, exploring whether the assertions in this article apply equally to entrepreneurs and managers will increase our understanding of the article's boundary constraints. Finally, scholars may want to uncover the extent to which one of the proposed relationships is stronger than another.

In conclusion, the current investigation highlights the importance of “getting out of the building” in the interview process, and acknowledges the potential cognitive issues associated with adopting

this approach. While biases are difficult to eliminate, we believe that the suggested remedy techniques can, to some extent, reduce their effects in the entrepreneurial process.

## References

- Adams, D., and Hublikar, S. 2010. Upgrade Your New-Product Machine. *Research Technology Management* 53(2), 55–67.
- Andreessen M. 2007. The PmarcaGuide to Startups, part 4: The Only Thing that Matters. <http://web.archive.org/web/20070701074943/http://blog.pmarca.com/2007/06/the-pmarca-gu-2.html> Accessed March 20, 2015.
- Anderson, N. H. 1965. Primacy Effects in Personality Impression Formation Using a Generalized Order Effect Paradigm. *Journal of Personality and Social Psychology* 2, 1–9.
- Åstebro, T., and Elhedhli, S. 2006. The Effectiveness of Simple Decision Heuristics: Forecasting Commercial Success for Early-Stage Ventures. *Management Science* 52(3), 395–409.
- Åstebro, T., Jeffrey, S. A., and Adomdza, G. K. 2007. Inventor Perseverance after Being Told to Quit: The Role of Cognitive Biases. *Journal of Behavioral Decision Making* 20(3), 253–272.
- Barnes, J. H., Jr. 1984. Cognitive Biases and Their Impact on Strategic Planning. *Strategic Management Journal* 5, 129–137
- Bharadwaj, N., Nevin, J. R., and Wallman, J. P. 2012. Explicating Hearing the Voice of the Customer as a Manifestation of Customer Focus and Assessing Its Consequences. *Journal of Product Innovation Management* 29(6), 1012–1030.
- Bhide, A. 1994. How Entrepreneurs Craft Strategies that Work. *Harvard Business Review* 72, 150–161
- Blank, S. 2013. Why the Lean Startup Changes Everything. *Harvard Business Review* 91(5), 64–72.
- Breckler, S. J. 1984. Empirical Validation of Affect, Behavior, and Cognition as Distinct Components of Attitude. *Journal of Personality and Social Psychology* 4, 1191–1205
- Brickman, P., Coates, D., and Janoff-Bulman, R. 1978. Lottery Winners and Accident Victims: Is Happiness Relative? *Journal of Personality and Social Psychology* 36(8), 917–927.
- Busenitz, L. W., and Barney, J. B. 1997. Differences Between Entrepreneurs and Managers in Large Organizations: Biases and Heuristics in Strategic Decision-making. *Journal of Business Venturing* 12(1), 9–30.
- Cooper, R. G. 1979. The Dimensions of Industrial New Product Success and Failure. *Journal of Marketing* 43(3), 93–103.
- Cooper, R. G., and Dreher, A. 2010. Voice-of-Customer Methods. *Marketing Management* 19(4), 38–43.
- Cooper, R. G., Edgett, S. J., and Kleinschmidt, E. J. 2004. Benchmarking Best NPD Practices-III. *Research Technology Management* 47(6), 43–55.
- Daghfous, A., Ashill, N. J., and Rod, M. R. 2013. Transferring Knowledge for Organizational Customers by Knowledge Intensive Business Service Marketing Firms: An Exploratory Study. *Marketing Intelligence and Planning* 31(4), 421–442.
- Felício, J. A., Caldeirinha, V. R., and Rodrigues, R. (2012). Global Mindset and the Internationalization of Small Firms: The Importance of the Characteristics of Entrepreneurs. *International Entrepreneurship and Management Journal* 8(4), 467–485.
- Forbes, D. 2005. Are Some Entrepreneurs More Overconfident than Others? *Journal of Business Venturing* 20(5), 623–640.
- Gilovich, T. 1981. Seeing the Past in the Present: The Effect of Associations to Familiar Events on Judgment and Decisions. *Journal of Personality and Social Psychology* 40(5), 797–808
- Gorry, G. A., and Westbrook, R. A. 2011. Can You Hear Me Now? Learning from Customer Stories. *Business Horizons* 54(6), 575–584.

- Gruner, K. E., and Homburg, C. 2000. Does Customer Interaction Enhance New Product Success? *Journal of Business Research* 49(1), 1–14.
- Haley, U. C. V., and Stumpf, S. A. 1989. Cognitive Trails in Strategic Decision-Making: Linking Theories of Personalities and Cognitions. *Journal of Management Studies* 26(5), 477–497.
- Harmancioglu, N., Grinstein, A., and Goldman, A. 2010. Innovation and Performance Outcomes of Market Information Collection Efforts: The Role of Top Management Team Involvement. *International Journal of Research in Marketing* 27(1), 33–43.
- Hayward, M. L. A., Shepherd, D. A., and Griffin, D. 2006. A Hubris Theory of Entrepreneurship. *Management Science* 52 (2), 160–172.
- Herr, P. M., Kardes, F. R., and Kim, J. 1991. Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective. *Journal of Consumer Research* 17(4), 454–462.
- Hogarth, R. M. 1987. *Judgment and Choice: The Psychology of Decision*. New York: Wiley.
- Hovland, C. I. 1957. *The Order of Presentation in Persuasion*. New Haven, CT: Yale University Press.
- Juslin, P. 1994. The Overconfidence Phenomenon as a Consequence of Informal Experimenter-Guided Selection of Almanac Items. *Organizational Behavior and Human Decision Processes*, 57(2), 226
- Kahn, H. 1990. One-on-Ones Should Sparkle Like the Gems They Are. *Marketing News* 24(18), 8–9
- Kaish, S., and Gilad, B. 1991. Characteristics of Opportunities Search of Entrepreneurs vs. Executives: Sources, Interests, General Alertness. *Journal of Business Venturing* 6(1), 45.
- Kardes, F. R., Cronley, M. L., and Kim, J. 2006. Construal-Level Effects on Preference Stability, Preference-Behavior Correspondence, and the Suppression of Competing Brands. *Journal of Consumer Psychology* 16(2), 135–144.
- Kardes, F. R., Kim, J., and Lim, J. 1994. Moderating Effects of Prior Knowledge on the Perceived Diagnosticity of Beliefs Derived from Implicit Versus Explicit Product Claims. *Journal of Business Research*, 29(3), 219–225.
- Katz, G. M. 2002. The Voice of the Customer. In *PDMA Toolbook 2 for New Product Development*, ed. P. Belliveau, A. Griffin, and S. M. Somermeyer, 167–99. New York: Wiley & Sons.
- Keh, H. T., Der Foo, M., and Boon, C. L. 2002. Opportunity Evaluation under Risky Conditions: The Cognitive Processes of Entrepreneurs. *Entrepreneurship Theory and Practice* 27(2), 125–148.
- Kenrick, D. T., and Gutierrez, S. E. 1980. Contrast Effects and Judgments of Physical Attractiveness: When Beauty Becomes a Social Problem. *Journal of Personality and Social Psychology* 38(1), 131–140.
- Kisielius, J., and Sternthal, B. 1984. Detecting and Explaining Vividness Effects in Attitudinal Judgments. *Journal of Marketing Research* 21(1), 54.
- Krueger, D. V., and Brazeal, N. F. 1994. Entrepreneurial Potential and Potential Entrepreneurs. *Entrepreneurship: Theory & Practice* 18 (3) (1994), 91–104
- Lee, H., Acito, F., and Day, R. L. 1987. Evaluation and Use of Marketing Research by Decision Makers: A Behavioral Simulation. *Journal of Marketing Research* 24(2), 187–196.
- Lord, C. G., Ross, L., and Lepper, M. R. 1979. Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence. *Journal of Personality and Social Psychology* 37(11), 2098–2109.
- Makri, M., Hitt, M. A., and Lane, P. J. 2010. Complementary Technologies, Knowledge Relatedness, and Invention Outcomes in High Technology Mergers and Acquisitions. *Strategic Management Journal* 31(6), 602–628.
- Mattei, M. D., and Hellebusch, S. 2006. Simplified Data Analytics for the Accurate Evaluation of a New Venture's Market Potential. *New England Journal of Entrepreneurship* 9(2), 9–17.
- Miller, N., and Campbell, D. T. 1959. Recency and Primacy in Persuasion as a Function of the Timing of Speeches and Measurements. *Journal of Abnormal and Social Psychology* 59, 1–9.
- Mitchell, R. K., Busenitz, L., Lant, T., McDougall, P. P., Morse, E. A., and Smith, J. B. (2004). The Distinctive and Inclusive Domain of Entrepreneurial Cognition Research. *Entrepreneurship Theory and Practice* 28(6), 505–518.

- Navis, C., and Glynn, M. A. 2010. How New Market Categories Emerge: Temporal Dynamics of Legitimacy, Identity, and Entrepreneurship in Satellite Radio, 1990–2005. *Administrative Science Quarterly* 55(3), 439–471.
- Nisbett, R. E., and Ross, L. 1980. *Human Inference: Strategies and Shortcomings of Social Judgment*. Englewood Cliffs, NJ: Prentice-Hall.
- Nisbett, R. E., Zukier, H., and Lemley, R. E. 1981. The Dilution Effect: Nondiagnostic Information Weakens the Implications of Diagnostic Information. *Cognitive Psychology* 13, 248–277
- Oskamp, S. 1965. Overconfidence in Case-study Judgments. *Journal of Consulting Psychology* 29, 261–265.
- Palich, L. E., and Bagby, D. R. 1995. Using Cognitive Theory to Explain Entrepreneurial Risk Taking: Challenging Conventional Wisdom. *Journal of Business Venturing* 10(6), 425–438.
- Parker, S. 2006. Learning about the Unknown: How Fast Do Entrepreneurs Adjust Their Beliefs? *Journal of Business Venturing* 21(1), 1–26.
- Paul, L. R., and Lancaster, G. 2007. Predictive Strategic Marketing Management Decisions in Small Firms. *Management Decision* 45(6), 1038.
- Pech, R. J., and Cameron, A. 2006. An Entrepreneurial Decision Process Model Describing Opportunity Recognition. *European Journal of Innovation Management* 9(1), 61–78.
- Peters, M. P., and Brush, C. G. 1996. Market Information Scanning Activities and Growth in New Ventures: A Comparison of Service and Manufacturing Businesses. *Journal of Business Research* 36(1), 81–89.
- Posavac, S. S., Kardes, F. R., and Brakus, J. J. 2010. Focus Induced Tunnel Vision in Managerial Judgment and Decision Making: The Peril and the Antidote. *Organizational Behavior and Human Decision Processes* 113(2), 102–111.
- Ries, E. 2011. *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Publishing.
- Roller, M. R. 1987. A Real In-depth Interview Wades into the Stream of Consciousness. *Marketing News* 21(18), 14.
- Salmon, S. 2013. Role Ambiguity as a Mediator of the Effect of Integrative Management Information on Managerial Performance: An Empirical Study in Australia. *International Journal of Management* 30(1), 175–192
- Sanbonmatsu, D. M., Posavac, S. S., Kardes, F. R., and Mantel, S. P. 1998. Selective Hypothesis Testing. *Psychonomic Bulletin and Review* 5(2), 197–220.
- Schweiger, D., Sandberg, W., and Ragan, J. 1986. Group Approaches for Improving Strategic Decision-making. *Strategic Management Journal* 5, 111–128
- Simon, M., and Houghton, S. M. 1999. The Effects of Cognitive Heuristics on Strategic Action: Overcoming the Risk Hurdle to First Move. *New England Journal of Entrepreneurship* 2(1), 35–44.
- Simon, M., and Houghton, S. M. 2003. The Relationship Between Overconfidence and the Introduction of Risky Products: Evidence From a Field Study. *Academy of Management Journal* 46(2), 139–149
- Simon, M., and Houghton, S. M. 2002. The Relationship Among Biases, Misperceptions, and the Introduction of Pioneering Products: Examining Differences in Venture Decision Contexts. *Entrepreneurship Theory and Practice* 27(2), 105–124.
- Simon, M., Houghton, S. M., and Aquino, K. 2000. Cognitive Biases, Risk Perception, and Venture Formation: How Individuals Decide to Start Companies. *Journal of Business Venturing* 15(2), 113–134.
- Singh, R. P., and Ronch, J. L. 2011. Changing Entrepreneurial Cognitive Processes with Age: A Conceptual Discussion Based on Neuroscience. *Journal of Marketing Development and Competitiveness* 5(6), 94–103
- Stuart, T. E., Ha, H., and Hybels, R. C. 1999. Interorganizational Endorsements and the Performance of Entrepreneurial Ventures. *Administrative Science Quarterly* 44, 315–349.
- Stumpf, S. A., and Dunbar, R. L. M. 1991. The Effects of Personality Type on Choices Made in Strategic Decision Situations. *Decision Sciences* 22(5), 1047–1072.
- Sykes, H. B., and Dunham, D. 1995. Critical Assumptions Planning: A Practical Tool for Managing Business Development Risk. *Journal of Business Venturing* 10, 413–424.

- Trope, Y., and Liberman, N. 2003. Temporal Construal. *Psychological Review* 110, 403–421.
- Tushman, M. L., and Anderson, P. 1986. Technological Discontinuities and Organizational Environments. *Administrative Science Quarterly* 31(3), 439–465.
- Winkler, R. L., and Poses, R. M. 1993. Evaluating and Combining Physicians' Probabilities of Survival in an Intensive Care Unit. *Management Science* 39(12), 1526–1543.
- Whetten, D. A. 1989. What Constitutes a Theoretical Contribution? *The Academy of Management Review* 14(4), 490–495.
- Zacharakis, A. L., and Shepherd, D. A. 2001. The Nature of Information and Overconfidence on Venture Capitalists' Decision Making. *Journal of Business Venturing* 16(4), 311–333.

## Acknowledgment

This research was generously supported by an Oakland University School of Business Administration Summer Research Fellowship.

## About the Authors



**TIANXU CHEN** (tchen234@oakland.edu) is an assistant professor at the School of Business Administration, Oakland University. He received his PhD at Drexel University, with a research focus on technology innovation, entrepreneurship, and competitive dynamics. His research appears in academic journals including *Research Policy* and *Strategic Management Journal*.



**MARK SIMON** (simon@oakland.edu) is an entrepreneurship professor at Oakland University where he teaches courses in entrepreneurship and strategy. He received his Bachelor of Science degree from Babson College and shortly thereafter started an import company and an outdoor recreation business. He obtained an MBA and PhD at Georgia State University.



**JOHN KIM** (kim@oakland.edu) is a Professor of Marketing at Oakland University. He has published articles in journals such as *Journal of Marketing Research*, *Journal of Consumer Research*, *Journal of Consumer Psychology*, and other business journals. He has organized and co-chaired the conference for the Society of Consumer Psychology.



**BRIAN POPLOSKIE** (poploskie@oakland.edu) is a part-time lecturer at Oakland University in the Decision and Information Sciences department. He received a Bachelor of Arts in Psychology from the University of Michigan, a Bachelor of Science in Computer Science from Eastern Michigan University, and an MBA in Finance from Oakland University.