Judgmental Heuristics in Overseas Vendor Search and Evaluation: A Proposed Model of Importer Buying Behavior

Neng Liang and Rodney L. Stump

This article identifies the *implicit* importer buying behavior model that is suggested by import decision studies and reviews contextual factors that distinguish international sourcing from its domestic counterpart. We then discuss the major shortcomings of the implicit model, namely, the failure to take into account the cognitive processes that influence vendor search and evaluation patterns. Drawing on the cognitive psychology and artificial intelligence literatures, this paper proposes an alternative model of importer buying behavior that explicitly accounts for the use of cognitive heuristics and presents a series of testable research propositions. Theoretical and managerial implications are also discussed. © 1996 John Wiley & Sons, Inc.

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Neng Liang, is Assistant Professor of International Business at the Joseph A. Sellinger SJ School of Business and Management, Loyola College in Maryland, 4501 N. Charles Street, Baltimore, MD 21210.

Rodney L. Stump, is Assistant Professor of Marketing, Earl G. Graves School of Business and Management, Morgan State University, Cold Spring Lane and Hillen Rd., Baltimore, MD 21239.

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Just as understanding voter behavior is the basis for formulating political strategy in a democracy, understanding importer behavior is a prerequisite for improving export performance in the highly competitive export markets. However, studies of importer behavior are virtually non-existent (Ghymn et al., 1993; Liang, 1995a). Extant studies of organizational buyer behavior (OBB) found in the marketing literature have been predominantly conducted in domestic settings. In the international business (IB) literature, studies have concentrated on exporter behavior, while largely ignoring importer behavior. For example, examining the 25 year article index of the *Journal of International Business Studies* (JIBS), a leading journal in international business, we find that, among the 633 articles published in JIBS during 1970–1994, only two (White, 1979; Hallen, 1982) have focused specifically on the import behavior of organizational buyers. Consequently, our knowledge of the importer behavior remains quite rudimentary.

Our focus in this article is a particular aspect of importer behavior, namely, importers' overseas vendor search and selection process. This process represents an important "window of opportunity" for the exporters, i.e., the period when importers will be most receptive to export proposals. Yet, this window may be quite small. Past research indicates buyers, on average, solicit less than six bids for a given buying task (Hakansson and Wootz, 1975; Vyas and Woodside, 1984), which is but a small fraction of the number of potential exporters for most products. Consequently, it is critical for exporters to anticipate the information needs, search trajectories, and choice rules of prospective importers in order to increase their chance of being selected.

This article proposes a conceptual model of importers' vendor search and selection processes. We begin by briefly reviewing the extant process-oriented models of organizational buying behavior found in the marketing and purchasing literatures. Next, we present an implied model of importer buying behavior that appears to be implicitly assumed in much of the import decision literature, and discuss the normative underpinning of this model, the rational choice framework. Drawing on insights derived from cognitive psychology and related literatures, we then discuss why this implied model, despite being intuitively appealing, is not representative of much of the behavior in the international setting. Specifically, we raise the fundamental question of whether most importers do actually conduct the rigorous information search and vendor selection efforts required by the rational choice approach and identify factors which influence this behavior. We then draw upon the literature of cognitive heuristics and the insights gained from eight depth interviews we conducted with purchasing executives from China and the

US to develop an alternative model of the overseas vendor search and selection process, and present a series of research propositions. We conclude with a discussion of managerial and research implications.

MODELS OF ORGANIZATIONAL BUYING BEHAVIOR

Since importing is a subset of organizational buying, we begin by reviewing the literature on organizational buying behavior in domestic markets. Over the past several decades numerous models have been proposed (see Moriarty, 1983; Webster, 1984 for critiques of the most prominent models). The earliest ones were simplistic task-oriented models that only focused on a single criterion or limited set of variables that determine buying outcomes.[1] More recently, increasingly more complex models have been developed, which elaborate on the underlying decision processes, intra- and interfirm behaviors related to procurement, and/or the impact of an array of contextual and situational factors (Robinson, Faris, and Wind, 1967; Webster and Wind, 1972; Sheth, 1973; Jackson, 1985; Möller and Laaksonen, 1986; Wilson and Möller, 1990).

Several OBB models recognize that organizational buying progresses through several conceptually distinct activity stages, although there is variance with regard to the number of stages that occur (Lilien & Kotler, 1983). The most prominent of the process-oriented OBB models is the BuyGrid (Robinson, Faris, and Wind, 1967), which has been extensively tested in industrial marketing studies and has largely become the accepted wisdom in the marketing literature (Moriarty and Spekman, 1984; Bunn, 1993).

The BuyGrid model, besides elaborating on how the purchasing process evolves, also highlights the significance of the purchase situation, which plays a pivotal role in buyers' search and choice decisions. Purchasing decisions can be categorized as new tasks, modified rebuys, or straight rebuys, based on the relative novelty of the decision.

In a new task, where the buyer is relatively inexperienced with the product and possibly prospective vendors, a high degree of procurement risk and decision making difficulty will be encountered. Consequently, the buyer is expected to engage in extensive problem solving activity, i.e., search widely, gather a great deal of information, review many alternatives; and use more comprehensive evaluation

[1]Interestingly, the extant international business and economics literatures largely reflect a task-orientated approach to overseas sourcing decisions. Among the rationales cited are reducing total cost, responding to competitive pressures, implementing a global strategy, import hysteria, and exchange rate pass-through (e.g., Baldwin, 1988; Swamidass, 1993).

methods. At the other end of the spectrum, if the task is a straight rebuy of a product regularly purchased previously, routinized response behavior prevails, such that virtually no search effort is expected, no alternatives other than the existing vendor are considered, and only procedural control is exercised. The search and decision effort for a modified rebuy, which represents limited problem solving, can be expected to fall between these two extremes. Modified rebuys may comprise new (but similar) product solutions to existing procurement needs, obtaining new vendors for products already being purchased, or a combination of the two.

Presently, however, no explicit model of overseas vendor search and selection behavior is available in the current literature (Liang, 1995a). Much of the overseas sourcing studies appear to have implicitly extended the BuyGrid, or another process model, to the international setting. Figure 1 presents the implicit model of importer buying behavior.[2]

In this model, the overseas buying process begins with an initial phase in which the organization recognizes that the focal product need cannot be met at home and decides to source overseas (Cayer, 1989). The need to source overseas might have been recognized at the outset of a particular procurement, e.g., to tap into an emerging technology, or when the needed product is simply not available in the home market. Alternatively, it might become apparent only after the procurement process has progressed through the evaluation of proposals from domestic suppliers, but the buyer has deemed these prospective vendors to be unsatisfactory or lacking sufficient capacity (Combs, 1976; Cayer, 1988).

Following this need recognition is a search stage, where the buyers seek to identify promising overseas supply options and collect information needed for vendor evaluation. Having established selection criteria relative to country characteristics (e.g., political stability, infrastructure, exchange rates), vendor characteristics (e.g., size, location, reputation, financial or technological strength), and bid characteristics (e.g., product specifications, quality, price, delivery timing, additional services) (Hakansson and Wootz, 1975; Combs, 1976; Leenders and Fearon, 1993; Zenz, 1995), buyers "screen" a large number of potential source countries and vendors, and narrow down the number of alternative vendors to a choice set, i.e. the one or few promising vendors to be evaluated carefully.

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[2]The reader is reminded that these are conceptual stages that portray the logical sequence of activities of this dynamic process. Temporally, some stages (or specific activities within them) may occur concurrently with others. Furthermore, there is apt to be a certain degree of iteration between stages as the importer's procurement needs become better understood or when salient new information is obtained.

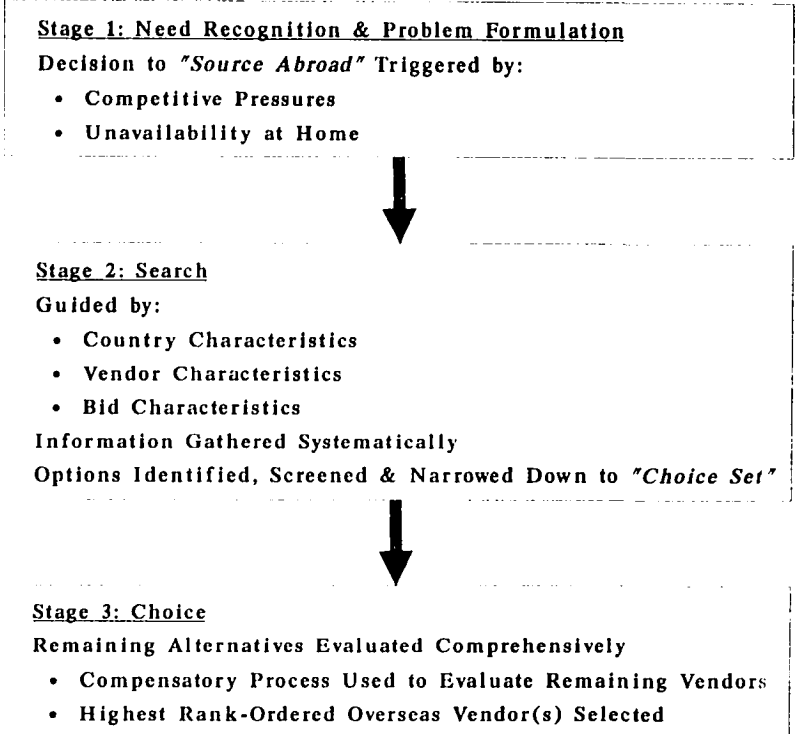

Figure 1 Implied Model of Importer Buying Behavior

In the last stage of vendor choice, organizational buyers finalize the vendor selection criteria, analyze the collected information on alternative vendors, products, and their attributes in a compensatory process that seeks to rank order all of the alternatives relative to the expected utility attributable to each (McFadden, 1981), and make their sourcing selections.

Despite the apparent face validity and intuitive appeal of this overseas extension to the process OBB models, available evidence in the IB literature and from field interviews suggests that it may be a poor model for representing all purchasing behavior in the international setting. Instead of exhibiting extensive problem solving behavior, as can be expected from the logic of the BuyGrid model and the implicit overseas sourcing model, importers often follow a rather ad hoc and even seemingly chaotic approach when initiating overseas supply relationships. It is well documented in the international business literature that many international supplier relationships start

with "unsolicited export orders" (UEOs), where importers place an order with a selected foreign vendor without any apparent systematic vendor search and evaluation (Leonidou, 1995; Liang, 1995b). In the seven US and UK studies reviewed by Bilkey (1978), the percentage of firms that started their exportation with UEOs ranged from 40 percent to 83 percent. More current studies conducted in other nations reconfirm these earlier findings. For example, the percentage of firms that export on the basis of UEOs is 62 percent in a Brazilian study (da Rocha et al. 1990), 61 percent in a Turkish study (Karafakioglu, 1986), and 36 percent and 33 percent in two Canadian studies (Beamish, 1986; Grondin, 1991).

This leads us to raise a fundamental question: *do organizational buyers behave differently in domestic versus international settings?* We propose in the next section that overseas sourcing, for comparable purchasing situations, involves a more difficult decision task than domestic procurement, and identify three areas that distinguish these two sourcing contexts.

CONTRASTING DOMESTIC AND OVERSEAS BUYING CONTEXTS

The domestic BuyGrid model, and the derived overseas sourcing version, are based on the "rational choice" (RC) framework. In the RC framework, search effort is a function of expected search benefits and information cost (Stigler, 1961) and profits are maximized net of information cost (Casson, 1992, 1995). Decision makers will keep searching and processing information up to the point where the expected marginal benefit of an improved decision equals the expected marginal cost of additional information (Ratchford, 1982; Hauser and Wernerfelt, 1990; Roberts and Lattin, 1991).

Although this framework has proven useful in domestic procurement settings, its application in international settings appears to be more limited. This tendency leads us to critically examine two crucial assumptions that underlay the rational choice approach: that decision makers can access all relevant information and that they are cognitively capable of processing the comprehensive array of information that is collected. As Simon (1974) and others have persuasively argued, human beings have only "bounded rationality." While humans are normally rational and strive to make the best decision they can, their cognitive capacity is finite and can be easily overwhelmed. When the demands of the task exceed their cognitive capacity, decision makers are forced to make choices based on decisions that utilize less than complete information and rely on alterna-

tive, noncompensatory decision strategies (Newell and Simon, 1972; Johnson and Meyer, 1984), especially in a difficult task environment (Formisano, Olshavsky, and Tapp, 1982).

On average, domestic procurement take place in a less difficult task environment, which means that organizational buyers have a greater opportunity to follow the rational choice approach and systematically increase their search effort as long as the marginal benefit of additional information is greater than its marginal cost. However, importing decisions can be distinguished from their domestic counterparts on three key factors: task complexity, environmental uncertainty, and the presence of structural impediments, that may constrain purchasing executives from following the rational choice approach.[3]

First, buying from overseas is arguably a more complex task than buying domestically. To a large extent, task complexity is a function of the number of calculations or comparisons that are needed to accomplish a task. We contend that, even after controlling for the purchasing situation and level of buyer expertise, decision tasks have a greater probability of being overwhelming when overseas sourcing is being contemplated than for domestic procurement. Not only is the number of alternative vendors apt to be substantially larger when drawn from the international marketplace, but it is also likely that more attributes will have to be evaluated per vendor simply because there are more decision criteria being used. Importers not only must evaluate procurement risks associated with product and vendor performance, as in any domestic sourcing decision, but they must also be concerned with risks that accrue from factors related to the country of origin. For example, among the thirty-four overseas sourcing decision variables identified by Samli, Grewal, and Mathur (1988), thirteen are related directly to countries of origins (e.g., governmental and cultural factors).

In complex judgment situations, people are able to effectively process only a limited amount of information in a given time (Hogarth, 1980; Bruner, 1957). Consequently, the combination of more prospective vendors, coupled with more attributes to evaluate, raises the prospect of "information overload." In this situation, where the attempted information processing load is greater than the decision maker's processing capability, individuals tend to make suboptimal decisions (Jacoby, 1984; Malhotra, 1982). To bring a complex problem

[3]For expositionary clarity, we dichotomized the concepts of domestic and international markets in this paper as if the distinction were clear cut. It should be noted, however, that the concept of "international" is actually quite fuzzy. For example, many have noted that there is a "border effect" between open economies such as the US and Canada, i.e., firms tend to treat the international market just across the border as local.

within the scope of their limited abilities, decision makers simplify their problem formulations by limiting the information used to arrive at a choice, "even leaving out much or most of what is potentially relevant" (Simon and Associates, 1986: 34). Thus, it may simply be impractical for many importers to follow the rational choice approach and systematically screen the entire, or even a substantial portion of the, global vendor pool.

Second, international buying decisions are apt to involve greater uncertainty about environmental conditions than domestic ones. In general, environmental uncertainty is defined as an inability to accurately perceive something about the external environment, because of difficulties in anticipating and assimilating environmental conditions (Dwyer and Welsh, 1985). Uncertainty is perceived when decision makers consider themselves to be lacking sufficient information to make accurate predictions or are unable to distinguish between relevant and irrelevant data (Milliken, 1987).[4]

Environmental uncertainty exists in various degrees. Low uncertainty exists when the decision maker is unsure of the exact outcome probabilities, but nevertheless has sufficient information to assign ballpark estimates to that probability. In other cases, there may be ambiguity concerning the probability of events (Payne et al., 1992) or no basis whatsoever on which to estimate outcome probabilities, which represents a greater degree of uncertainty or a second-order, subjective probability of probabilities (Abelson and Levi, 1985). Birou and Fawcett (1993), for example, have identified nine sources of uncertainty in international sourcing: diverse political environments, diverse business practices, nationalistic attitudes/behavior, culture and language barriers, volatile exchange rates, longer logistics, JIT (just-in-time) sourcing requirements, finding qualified sources, and duty/customs regulations. While many of these factors are not unique to an international context, it can be argued that uncertainty related to international sourcing encompasses a broader range of factors and is largely second-order in nature.

The net result is that environmental uncertainty is a two-edged sword. On the one hand, it is a powerful motivation for engaging in an extensive information search process in order to improve the decision quality. On the other hand, it also makes search effort extremely difficult and expensive, and increases the probability that extraneous information may be collected and incorrectly used in the

[4]"The construct of environmental uncertainty has a rich, and much debated, conceptual and empirical history in the organizational and related literatures (see Downey and Slocum, 1975; Jauch and Kraft, 1986; Milliken, 1987 for reviews of this extensive literature). Much of the controversy has centered on whether environmental uncertainty is an objective versus perceptual phenomenon. In recent years, the perceptual view has gained dominance.

evaluation of sourcing alternatives (Punj and Staelin, 1983; Johnson and Russo, 1984). While decision makers can normally be expected to increase their information search effort to reduce the uncertainty, they may actually reduce their search effort when the required information processing is perceived as beyond their cognitive capacity (Furse et al., 1984). Given the magnitude of uncertainty in international sourcing, organizational buyers are more likely to reduce their information processing load by simplifying the problem formulation and switch to a simpler, less taxing decision approach.

Third, organizational buyers' searching abilities are apt to be more limited when conducted in international, versus domestic markets, due to structural impediments. This can be attributed mainly to data problems and information barriers (Terpstra and Sarathy, 1991). To a certain extent, the amount of information available to buyers is a function of the relative marketing efforts of vendors. Since most vendors allocate the lion's share of their marketing and promotion budgets to their home and dominant foreign markets, product-specific information is generally less available to prospective customers found outside of the intended target market(s). The same is apt to be true with regard to government and trade association information and promotion efforts.

Furthermore, company-level information (e.g., financial stability, credit ratings) is often unavailable or in another language, difficult and/or costly to obtain, due to the greater social, cultural, technological, time and geographical distances that separate organizational buyers from their overseas suppliers (Ford, 1984). Even when information is available, cross national comparisons are frequently beset with methodological problems (Combs, 1976; Marer, 1980).

Simon has observed that "human rational behavior is shaped by a scissor whose two blades are the structure of the task environment and the computational capabilities of the actor" (1990: 7). Given the higher task complexity and environmental uncertainty, which raises the prospect of information overload and lower quality decisions, and structural impediments, which reduces the computational capabilities of organizational buyers, we submit that a higher proportion of international sourcing tasks, as compared to domestic sourcing tasks, will fall beyond the bound of rationality of purchasing executives, as illustrated in Figure 2.

The horizontal axis of Figure 2 indicates the task difficulty, which subsumes complexity, uncertainty and structural impediments; the vertical axis, the distribution of procurement tasks. Tasks that fall to the right of the shadowed bar represent those that exceed the cognitive abilities of decision makers. The two task distribution curves indicate our belief that although some domestic sourcing tasks will

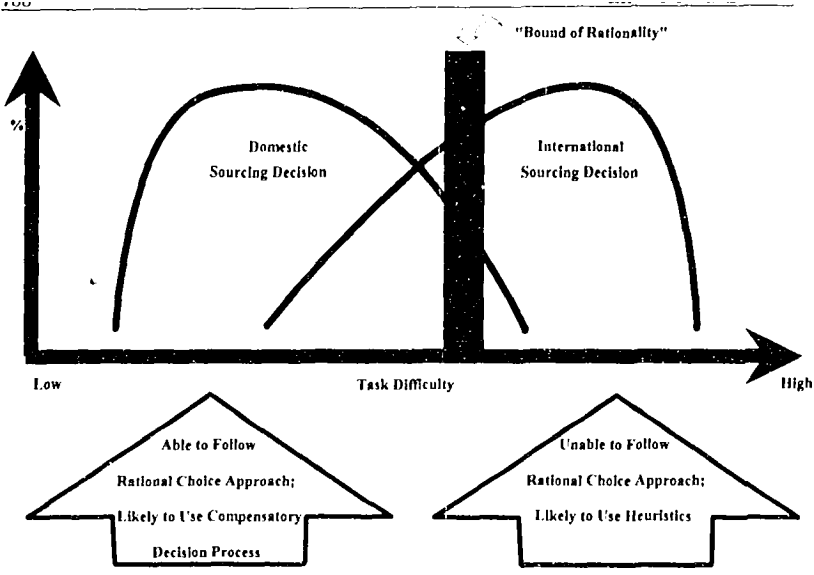

Figure 2 Distribution of Domestic Vs. International Sourcing Tasks

be more difficult than international tasks, a higher proportion of international sourcing tasks will lay beyond the bounds of the rationality of purchasing executives. Consequently, purchasing executives are expected to be less likely to follow the rational choice approach in international sourcing decisions than in domestic purchases.

We formalize our conceptual arguments related to the difficulty of the decision task in the following propositions:

Proposition 1: Decisions leading to overseas sourcing (for comparable purchasing situations and levels of buyer expertise) will be perceived as having greater task complexity, higher environmental uncertainty, and greater structural impediments than domestic sourcing decisions.

Proposition 2: The positive effect of task complexity and environmental uncertainty on information search will be moderated by the bound of rationality of decision makers.

Proposition 3: The degree to which structural impediments are present will negatively affect information search.

Proposition 4: In domestic sourcing decisions, buyers are more likely to follow a rational choice approach of conducting systematic vendor search and evaluation (i.e. use a compensatory process); with international sourcing, they are more apt to adopt a cognitively less demanding, noncompensatory approach.

RECONCEPTUALIZING OVERSEAS VENDOR SEARCH AND EVALUATION

Echoing Simon's (1989: 377) general question, "how do people make decisions when the conditions for economists' global rationality are not met?" the preceding discussion leads us to examine how importers conduct their overseas vendor search and evaluation, when the information processing load is beyond the bound of their rationality. We next consider alternative approaches that importers may use. Specifically, we focus on the role of cognitive heuristics in the selection of overseas vendors.

Cognitive Heuristics and Decision Making

As Tversky and Kahneman (1974) pointed out, many important decisions are based on beliefs concerning the likelihood of uncertain events, such as the outcome of an election, the guilt of a defendant, the future value of the dollar, or in our context, the likelihood that prospective foreign suppliers will fulfill the terms of the purchasing agreement. These problems usually cannot be solved precisely. Even if precision was available, the costs of the requisite data collection and information processing are often prohibitively expensive. To bring these complex problems back within the bound of their rationality, humans rely on heuristics to simplify their problem formulations and take "short-cuts." Heuristics are also used when people are unwilling to make the cognitive effort needed for an accurate decision. A growing body of evidence lends credence to the fact that decision approaches are not invariant across task environments. Instead, compromises between seeking the best decision and the desire to minimize cognitive effort are made by decision makers (Payne et al., 1992, 1993; Write, 1975). In either case, people "satisfice," seeking "to find good-enough solutions. And good enough solutions can often be found by heuristic search" (Simon, 1989:378).

Broadly speaking, cognitive heuristics are approximating techniques used when a problem cannot or need not be solved exactly (Simon and Associates, 1986; Payne et al., 1992). These approximations or educated guesses are usually expressed in statements such as, "I think that. . .," "chances are. . .," "it is unlikely that. . .," and so on.

In their seminal article, Tversky and Kahneman (1974) identified three heuristics (representativeness, availability and adjustment and anchoring) that people use to judge probabilities and to make decisions under uncertain circumstances. These subjective assessments of probability and complex phenomena are based on data of limited validity, which are processed according to judgmental "rules

of the thumb." In general, these heuristics are quite useful, but they may also lead to severe and systematic errors. For example, the apparent distance of an object is judged in part by its clarity, such that the more sharply an object is seen, the closer it appears to be. This rule has some validity because in any given scene the more distant objects are seen less sharply than nearer objects; but this also leads to estimation errors when the contours of objects are blurred (Tversky and Kahneman, 1974).

From that origin two decades ago, a wave of studies on heuristics have been spawned (Kahneman, Slovic, and Tversky, 1982). The list of heuristics and biases has now expanded to include confirmatory strategies and expectancy effects, central versus peripheral information processing, simulation and counterfactual thinking, hindsight and recall biases, and biases arising from framing effects (Heath and Tindale, 1994). However, much of the first wave studies were conducted in laboratory contexts and their relevance to real life decisions was questioned. More recently, researchers began to apply heuristics to real-world issues and a second wave of heuristic studies is now in. Evidence of decision heuristics has been documented in numerous empirical studies in a wide range of situations, e.g., Combs and Slovic's (1979) study of frequency estimates of mortality causes; Brewer's (1988) and Fiske and Pavelchak's (1986) studies concerning the use of categories in the judgement about people, and Schwartz's (1994) study on doctors' medical judgments.

A comprehensive review of all relevant heuristics is beyond the scope of the present article (see Heath and Tindale, 1994, for an excellent review). Instead, we focus our attention on three heuristics which have received considerable empirical support, particularly second wave studies of similar "search and choice" problems (e.g., Smith, 1994). Based on field interviews and the IB literature, we submit that availability, representativeness, and simulation are heuristics that are germane to international sourcing decisions.

The Availability Heuristic and the Search for Overseas Vendors

The availability heuristic is important because of the role it plays in forming the information set from which choices are based, i.e., it can provide insights of how importers decide what information to collect and attend to and what they ignore. The basic premise of the availability heuristic is that decision makers will use information that is most easily recalled or readily accessible to them, rather than what is most relevant to the underlying question, as the basis of judgment (Tversky and Kahnemann, 1974). Through life experience, people

come to associate the likelihood of events with the ease of observing or recalling them. Usually this heuristic works quite well; all things being equal, common events are easier to remember and recall than are uncommon events. By relying on this heuristic, decision makers are able to simplify what might otherwise be a very difficult judgment.

However, relying on the availability heuristic can also lead to systematic errors. This is because the availability of an item of information is influenced by several factors, in addition to event likelihood itself. Such factors include the properties of the information itself (e.g. salience, recency, and level of abstraction), the extent to which it confirms existing opinions, whether the information is derived from category familiarity or direct experience, and source accessibility (Park and Lessig, 1981; Taylor and Thompson, 1982; Punj and Staelin, 1983; Johnson and Russo, 1984; Sherman and Corty, 1984; Rao and Monroe, 1988; Smith, 1994).

The use of the availability heuristic has been documented in numerous empirical studies (Combs and Slovic, 1979; Park and Lessig, 1981; and Schwartz, 1994). For example, Smith (1994) applied the availability heuristic to examine students' college choice processes and found that a student's college choice was made based on the information that was easily retrievable from memory. Where the information was vivid and salient, it was easily recalled, relied upon, and overestimated with regard to importance. Conversely, more relevant but abstract "hard data" and statistics were either given low weight or simply ignored.

We propose that organizational buyers may follow the same availability heuristic in their information search. Given the complexity of the overseas sourcing process and the huge amount of potentially relevant information out there, prospective buyers may be unable or unwilling to collect and process all of the information available to them. Consistent with the notion of satisficing, this heuristic suggests the buying process may be driven more by a desire to minimize cognitive effort, rather than ensuring the best result. During the search stage, organizational buyers may attend to and collect only the information that is readily available.

Anecdotal evidence from the IB literature and from our depth interviews supports this premise. For example, the IB literature documents that evaluations of potential vendors are heavily influenced by the existing knowledge stock and country perceptions of the involved organizational buyers, i.e., "country-of-origin" stereotypes of both the products and their vendors (White, 1979; Bilkey and Nes, 1982). Instead of evaluating each vendor on its own merits, buyers tend to eliminate from consideration all vendors from a particular

country if they have an easily recalled negative perception of that country (e.g., generalizations about product quality, service levels, pricing, business practices, etc.). It is also documented that in the analysis of political risk of international transactions, international business executives often use simplistic categories, such as "hot" and "cold" countries, to prioritize targeting efforts and allocate resources across countries (Czinkota and Tesar, 1982). Thus, it is likely these same biased, yet readily available, mental maps play a role in allowing decision-makers to simplify the vendor search process. Consequently, there appears to be a tendency to only seriously examine prospective suppliers from countries that the decision-maker is already familiar with and/or holds favorable perceptions drawn from country stereotypes.[5] Hence, we submit the following research proposition:

> Proposition 5: In their targeting of overseas sources, organizational buyers will rely most heavily on country information that is already available to them, rather than on systematic screening analysis.

Another indication of reliance on the availability heuristic is importers' choice of information sources. Because different information sources yield varying qualities of information, from the rational choice perspective of balancing marginal cost against marginal benefit, information search should follow the "best source first" approach, i.e., commencing with the information source with the potential for the greatest decision quality, and then, if the information need is still unmet, moving down to the next best source, and so on (Brown, 1965). However, empirical studies have shown that decision makers tend to follow a "least trouble first" approach (Mintzberg, 1973; Mintzberg et al., 1976) and start with the "most accessible" information source, even though it may not be the most appropriate one (Culnan, 1983). For executives, that most accessible source is typically their personal network of business colleagues rather than impersonal third-party sources (Boissevain, 1974; Daft et al., 1988).

Traditionally, the use of personal information by executives is explained by "media richness," i.e., personal information sources are considered a better means of communicating multifaceted and ambiguous information. Under uncertainty, the information required in decision-making is inherently more ambiguous in nature, thus re-

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[5]It should be noted that relying on stereotypes is particularly likely at the outset of overseas sourcing, when organizational buyers have the least experience and their search capacity may be most constrained. Khanna (1986) has documented that such stereotypes influence importers primarily in their dealings with new exporters but not with existing sources with whom the importers have had direct experience.

quiring a communication medium that can carry multiple cues (Fulk et al., 1987). An alternative explanation derived from the availability heuristic is that personal information sources are chosen not because they can carry multiple cues but merely because they are easily available.

Depth interviews with industrial buyers revealed that industrial buyers' favored vendor search method is to call import/export brokers or distributors that they've dealt with, or contact their peers in purchasing, to obtain vendor referrals and recommendations. In effect, they are using a "snowballing" technique that draws upon the human index of other individuals (Simon, 1974). In one in-depth interview, a senior purchasing executive of a US-based multinational corporation was asked to detail his approach to locating prospective overseas vendors, particularly how countries were selected and the sequencing of the search, and responded, "Good question. I wish I had an answer. I would just call a broker in New York that I know handles that commodity for recommendations."

Judging from the responses obtained during other interviews, it appears that the use of a snowballing approach is common among organizational buyers when contemplating overseas sourcing. From our interviews, there was little indication that buyers consult other impersonal information sources that are deemed to be cumbersome to access, even though they may be more objective and appropriate. For example, another American purchasing executive commented, "Forget about the national trade data bank. It's not worth it."[6]

This combination of anecdotal information and prior theory leads us to our next research proposition:

> Proposition 6: Organizational buyers will tend to rely on information sources that are perceived to be most easily accessed, i.e. their established personal network, over more accurate and appropriate, but less accessible sources.

A third indication of the availability heuristic being used is organizational mimetic behavior (Galaskiewicz and Wasserman, 1989), where buyers may simply observe where others are importing from and follow suit, rather than conducting their own information search. In one interview in China, a senior government official in charge of the importing of medical equipment quoted a Chinese proverb, "I would not be the first to taste the crab." This official was

[6]The National Trade Data Bank, a comprehensive data base that includes a vast array of publications that relate to international trade, is drawn from nearly all branches of the US Government and some international organizations. Since July 1994, it has been available on-line.

indicating that he would wait for major trading corporations to import first, observe the results, and then decide whether to place an order with that overseas source. Use of the availability heuristic is also manifested in the "reputation effect," where buyers consider only those firms whose reliability are already known from experience or vouched for by a trusted third-party (Cunningham and White, 1974).

Representativeness and Simulation Heuristics and Vendor Choice

One consequence of relying on the availability heuristic in the information search stage of the import decision making process is that importers may only have incomplete information about potential vendors. Worse yet, whatever information buyers have collected is likely to be inconsistent, i.e. the amount or type of information for each vendor in the choice set is apt to vary, which makes rigorous and objective inter-vendor comparison impossible. Two additional heuristics, representativeness and simulation, can help us understand alternative means of selecting overseas vendors when alternatives cannot be rank ordered.

The essence of the representativeness heuristic is when an individual judges the likelihood that a particular instance, subject, or object belongs to a specific category by virtue of its match or resemblance to others in that category (Kahneman and Tversky, 1973, 1974). Numerous studies have documented the use of representative heuristics in many real-life occasions. For example, Lurigio, Carroll, and Stalans (1994) found that criminals are often judged and sentenced on the basis of how similar they appear to be to prototypical criminals. Stalans (1994) reported a similar process when people judge the fairness of public officials. Smith (1994) has found that students who perceived themselves as being similar to students at a particular college were more likely to report an interest in attending that school and showed higher intentions of applying for admission.

Currently there are no known studies that apply the representativeness heuristic to the overseas vendor selection process. However, we suspect that organizational buyers employ this same mechanism in their choice of suppliers. Rather than assessing their potential for success or satisfaction with a particular vendor from qualification information, such as ISO 9000 certification, buyers may instead rely on the singular experience of another buyer whose firm is very similar to them and generalize that they too would have a similar purchasing experience with that overseas vendor.

Alternatively, buyers may make judgments about the similarity between a particular prospect and "representative," or prototypical

good suppliers. While empirical studies of "country-of-origin" have concentrated on "made-in" stereotypes of products, evidence also shows that importers hold similar stereotypes of vendors relative to particular countries (Keown, 1985). Thus, ranking prospective overseas vendors may be based on stereotypical country biases, rather than the actual characteristics of vendors, just as judgments of executives may be influenced by his/her organizational dress, office location and furnishings (Rafaeli, 1993). Hence, we propose:

> Proposition 7: Overseas sourcing will show a higher incidence of vendor selection based on a) the buyer's representativeness, i.e., resemblance to a peer firm who is already successfully sourcing from that vendor, and b) the supplier's representativeness, i.e., judgments of the vendor's similarity to the buyer's stereotypical image of "good" vendors than in domestic sourcing.

Another heuristic that may be utilized in an overseas vendor choice context is simulation, or the ease by which a person can construct scenarios that fit a particular event (Kahneman and Tversky, 1982; Smith, 1994). Instead of calculating the probability of an event by applying relevant probability rules and analyses, people construct mental scenarios that might lead to a specific event or outcome. Thus, the easier it is to envision scenarios involving the desired outcome, i.e. in our context, a satisfactory purchasing experience, the more probable the event will be perceived.

An empirical example of the simulation heuristic found in the real-life decision literature is a study of negligence court cases by Wiener and Pritchard (1994), who found that when defendants' behaviors were perceived as being less normal, verdicts favoring plaintiffs were more likely. In other words, jurors were less able to construct mental scenarios related to defendants' behaviors versus that of plaintiffs and thus assigned a higher probability to the plaintiffs' version of events. Smith (1994) has also found that students' college choices were influenced by the degree to which they could "imagine" or generate scenarios of feeling comfortable in particular schools.

In our context, we hypothesize that purchasing executives may use mental simulations to imagine whether they would be comfortable working with particular boundary spanning individuals from a prospective vendor. This is consistent with the interpersonal "chemistry," or compatibility, criterion for partner selection proposed by DiMaggio (1992) whereby organizational buyers engage in a "cultural matching process in which actors rely subliminally on verbal and non-verbal cues to estimate cultural overlap experienced as comfort/discomfort, and confidence/unease" (p 131). Nohria (1992) has

also noted the importance of the "mutual sizing up" process on the interpersonal level, stating,

> The flow of emotional energy shapes the creation of social ties. Positive flows increase the likelihood of further interaction, and negative flows diminish the chances. . . . In an interaction that is conducted in the spirit of mutual sizing up, there is the distinct possibility that one or the other interactant may not "compute" up to the other's expectations. Face-to-face contact is considered crucial to the assessment. Links are often forged because the interactants "hit it off" or destroyed because "the vibes weren't there"—reasons that are entirely subjective. (248)

Furthermore, anecdotal evidence suggests that this actually occurs. For example, one American architectural design firm obtained a multi-million dollar design contract when its chairman "bumped into" and hit it off with a Singaporian real estate developer during breakfast in a five star hotel in Beijing (Higgs, 1993). As the chairman of the architecture firm later commented, "We just happened to be at the right place at the right time."

Thus, the simulation heuristic holds the potential to shed new light on the seemingly chaotic, "ad hoc" approach by which many international buyer–supplier relationships are established, including the phenomenon of unsolicited export orders. Seen from the perspective of this heuristic, importers may not be acting irrationally if overseas vendors are selected in this fashion; purchasing executives may be choosing to skip rigorous, open bidding procedures in favor of chance encounters, not so much because of the lack of organizational or cognitive resources to conduct a thorough investigation, but because this "face-to-face" mutual probing may be perceived as a superior venue to gauge the prospect of getting along with key individuals, while simultaneously gaining insight of overseas vendors' capabilities and trustworthiness. Where the buyer can generate multiple "comfortable working together" scenarios as a result of information gleaned from a fortuitous encounter, the more likely the overseas vendor will be judged favorably. Hence, we propose,

> Proposition 8: Overseas sourcing will show a higher incidence of vendor selection based on the perceived compatibility between executives of the two firms versus a compensatory decision.

As a consequence of recognizing the role that cognitive heuristics may play in overseas vendor search and evaluation processes, we propose a modified importer buying behavior model, as presented in Figure 3.

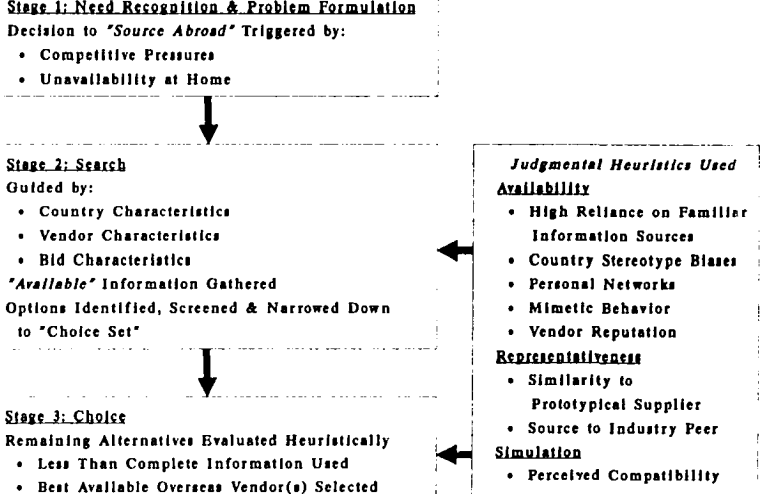

Figure 3 Heuristic-Guided Model of Importer Buying Behavior

In this descriptive model, as the overseas sourcing decision task becomes more difficult and exceeds the bounds of rationality, importers are more likely to engage in biased search efforts, where they heavily rely on available information to guide their search of the global vendor pool, instead of systematically screening and gathering all information that provides a net marginal contribution to decision quality. Vendor choice, too, is more apt to be biased, resulting from representativeness or simulation heuristic judgments, rather than the objective evaluation of all relevant attributes and selection of the top-ranked alternative.[7]

V. SUMMARY AND CONCLUSION

In summary, we have identified the implicit model of overseas vendor search and evaluation extrapolated from domestic organizational buying models and have identified circumstances that can make it

[7]This model applies mainly to the international sourcing tasks that fall beyond the rationality bound in Figure 2. For those international tasks that are well within the bound, such as straight rebuys from an established foreign vendor, or modified rebuys within an established foreign sourcing country, the buyers may follow the rational choice approach as they do in the familiar domestic markets.

impractical, if not impossible to conduct the systematic search and rigorous evaluation process required of "rational choices." Drawing on the premise that decision makers may willingly trade off between decision quality and cognitive effort or be forced to make decisions based on limited information, we have developed an alternate framework for importer buying behavior that recognizes the role of judgmental heuristics. Summarizing the "big picture":

> Buying from an overseas vendor is a complex and uncertain process, characterized by seemingly ad hoc referrals and inquiries, chance meetings, and accidental discovery. How an overseas vendor is selected is better conceived as a heuristic-guided search process, where information gathering and decision making are intertwined, rather than as a comprehensive and systematic choice process, where all options and attributes are identified and evaluated simultaneously. A tradeoff is made to simplify the task by following "rules of thumb" heuristics that keeps the information gathering and decision making process within the bounds of rationality.

Purchasing executives tend to exert less systematic vendor search and evaluation in overseas procurement than is expected from the rational choice framework. They appear to scan world markets guided by the idiosyncracies of their existing cognitive maps and make more subjective judgments. However, such use of heuristics may not be irrational but intelligent responses to cope with the complexity and uncertainty that is inherent in international sourcing decisions.

Implications and Directions for Future Research

One major theoretical implication that can be drawn is that we can expect considerable variation among importers' information search and evaluation behavior when they make overseas sourcing decisions, which reflects the compromise between decision quality and cognitive effort. Instead of always seeking to select the best vendor, importers may deem satisficing to search for "a good enough vendor," a more pragmatic solution under many circumstances. Such a decision may not be irrational—but instead may be symptomatic of a desire to jointly minimize two forms of procurement costs. In particular, this behavior may reflect an attempt to balance *opportunity costs* (i.e., the consequences of making a wrong decision, e.g., higher product costs, deficient product quality or vendor performance) versus the *information costs* (including both acquisition and processing costs) necessary to make the sourcing decision.

Several research directions can be suggested. From a cognitive

perspective, research is needed to determine the relative priority between decision quality and cognitive effort, that is, the determinants of boundary conditions in international business decisions besides task difficulty. Other factors to consider for conceptual development and empirical research include the impact of importers' procurement goals (e.g., cost reduction, technology transfer, strategic alliance formation), the significance of the particular procurement (e.g., item importance, dollar amount of requirements), corporate strategies (e.g., degree of multinational operations, commitment to global sourcing) and structure (e.g., degree of decision centralization, systems in use (MRP, JIT, etc.), whether a buying center is involved (and the accountability and reward system), corporate resources available to the sourcing tasks, including human resources (such as quality of purchasing staff (e.g., size, training, and experience), trade association membership and other existing linkages to cross-border networks), technological resources (e.g., computing and communication equipments, purchasing application software, decision support systems, availability/access to relevant databases, internet access), and other factors relevant to the bounds of rationality (e.g., time constraints).

Furthermore, we have addressed only three of the judgmental heuristics that have been identified by cognitive psychologists and proposed their relevance in the context of overseas sourcing decisions. There is need to examine other heuristics in importer buyer behavior and develop a more complete delineation of the boundary conditions which may trigger the use of particular heuristics or combinations in importing purchasing decisions.

From a procurement perspective, as our review of the literature has revealed, there is a paucity of research in the area of international organizational buying behavior. Although much procurement research has been conducted by scholars in the field of operations, logistics and inventory management, their focus has largely been normative, that is, "how to" guides for purchasing executives, rather than examining actual behavior.

Equally important are the performance implications. While the use of heuristics enable purchasing managers to cope with complexity and uncertainty, it also leads to systematic errors. If importers are indeed taking a contingent approach to their overseas sourcing decisions, the obvious question is how do we determine the extent and severity of overseas sourcing "mistakes"?

Managerial Implications

Several managerial implications also emerge from this re-conceptualization of overseas vendor choice. From the perspective of import-

ers, a note of caution is in order. The "siren's call" of the availability heuristic is that it simplifies the task, but with it also comes a significant margin for error. Since decisions are made on "available" information only, the search process is necessarily incomplete, often biased, and heavily influenced by one's existing knowledge stock and perceptions. In effect, decision makers using the availability heuristic are trading off comprehensiveness and greater objectiveness for a riskier, albeit less burdensome, search effort. Similarly, the advantage of basing vendor judgments on representativeness and simulation is that they can enable decision makers to avoid the enormous information processing demands inherent to the rational choice model. Consequently, this biased decision process is apt to miss selecting the best overseas vendor in many instances.

For exporters, recognizing that vendor selection outcomes are often not the result of systematic search and evaluation processes, a critical concern is to anticipate the "search path" of one's counterpart, i.e., the settings (time, places, and occasions) where targeted buyers will tend to conduct their search. If importers' vendor searches are based to a great extent on available information and conducted via personal networks, then the way for exporters to improve their targeting effectiveness is to improve their own knowledge of these networks so that they become more "searchable." For starters, examining call reports and picking the brains of the sales staff will help determine whether particular firms (e.g., present customers, trading companies, export/import brokers, etc.) have repeatedly referred business. Armed with this information, additional feedback can be obtained from key individuals at these firms (either individually or perhaps in focus groups) to identify new foreign markets or prospective customers to pursue.

Another critical aspect is to recognize that, under certain circumstances such as when the bound of rationality is exceeded, actual vendor choice may result from the criteria and evaluation approaches that are different from those assumed under the rational choice framework. Where importers simplify the formulation of the sourcing problem, then, export strategy should be formulated to respond to this simplified heuristic model. For example, if importers make their vendor choice based on their perceptions of representative "good vendors," exporters will need to determine the nature of these perceptions and examine the consistency of the image projected by their firms. It is also likely that these perceptions of good vendor will vary across countries.

It should be noted that the framework and research propositions developed in this article are based on an interdisciplinary literature review and field interviews. Yet to be determined is how wide spread

is the use of heuristics in overseas sourcing decisions, and the full range of boundary conditions that trigger this phenomenon. We hope that this article will serve as the impetus for thoughtful debate, further conceptual development, and empirical research in this area.

REFERENCES

Abelson, R.P. and Levi, A. (1985) "Decision making and Decision Theory," in G. Lindzey and E. Arsonson (Eds.), *The Handbook of Social Psychology,* 3rd ed., New York: Random House. 1985.

Baldwin, R. (1988) "Hysteresis in Import Prices: The Beachhead Effect," *American Economic Review,* 78(4), 773–785.

Beamish, P.W. and Munro, H. (1986) "The Export Performance of Small and Medium-Sized Canadian Manufacturers," *Canadian Journal of Administrative Science,* 3(1), June, 29–40.

Bilkey, W.J. (1978) "An Attempted Integration of the Literature on the Export Behavior of Firms," *Journal of International Business Studies,* (1), 33–46.

Bilkey, W.J. and Nes, E. (1982) "Country-of-Origin Effects in Product Evaluations," *Journal of International Business Studies,* Spring/Summer, 89–99.

Birou, L.M. and Fawcett, S.E. (1993) "International Purchasing: Benefits, Requirements, and Challenges," *International Journal of Purchasing and Materials Management,* Spring, 28–37.

Boissevain, J. (1974) *Friends of Friends: Networks, Manipulations and Coalitions,* New York: St. Martin's Press.

Brewer, M.G. (1988) "A Dual Process Model of Impression Formation," in T.K. Srull and R.S. Wyer (Eds.), *Advances in Social Cognition,* 1, 1–36. Hillsdale, NJ: Lawrence Erlbaum.

Brown, D. (1965) *Academic Labor Markets,* Washington, DC, Dept of Labor, Office of Manpower, Automation, and Training, (cited in Granovetter: Getting a Job; 1974).

Bruner, J.S. (1957), "On Perceptual Readiness," *Psychology Review,* 64, 123–152.

Bunn, M.D. (1993) "A Taxonomy of Buying Approaches," *Journal of Marketing,* 57(1), 38–56.

Casson, M. (1992) "Economic Perspectives on Business Information," *University of Reading Discussion Papers in Economics,* V(261), Department of Economics, University of Reading, November.

Casson, M. (1995) The Organization of International Business, Aldeshot, UK: Edward Elgar Publishing.

Cayer, S. (1989) "Low-key but savvy: how Deere's purchasing is girding for global competition," *Purchasing,* October 12, 49–55.

Combs, P.H. (1976) *Handbook for International Purchasing,* 2nd ed., Boston, MA: Cahners.

Combs, B. and Slovic, P. (1979) "Causes of Death: Biased Newspaper Coverage and Biased Judgments," *Journalism Quarterly,* 56, 837–843.

Culnan, M.J. (1983) "Environment Scanning: The Effects of Task Complexity and Source Accessibility on Information Gathering Behavior," *Decision Science,* 14, 194–206.

Cunningham, M.T. and White, J.G. (1974) "The Determinants of Choice of Supplier," *European Journal of Marketing,* Winter, 189–202.

Czinkota, M. and Tesar, G. (Eds.) (1982) *Export Management: An International Context,* New York, NY: Praeger Publishers.

Daft, Richard L., Sormunen, J. and Parks, D. (1988) "Chief Executive Scanning, Environmental Characteristics, and Company Performance: An Empirical Study," *Strategic Management Journal,* 9.

da Rocha, A., Christensen, C.H. and da Cunha, C.E. (1990) "Aggressive and Passive Exporters: A Study in the Brazilian Furniture Industry," *International Marketing Review,* 7 (5), 6–15.

DiMaggio, P. (1992) "Nadel's Paradox Revisited: Relational and Cultural Aspects of Organizational Structure," in N. Horia and R.G. Eccles (Eds.), *Networks and Organizations: Structure, Form, and Action,* Boston: Harvard Business School Press, 118–142.

Downey, H.K. and Slocum, J.W. (1975) "Uncertainty: Measures, Research, and Sources of Variation," *Academy of Management Journal,* 18, 313–327.

Dwyer, F.R. and Welsh, M.A. (1985) "Environmental Relationships of the Internal Political Economy of Marketing Channels," *Journal of Marketing Research,* 22, 397–414.

Fiske, S.T. and Pavelchak, M.A. (1986) "Category-based vs. Piecemeal-based Affective Responses: Developments in Schema-Triggered Affect," in R.M. Sorentino and E.T. Higgins (Eds.), *The Handbook of Motivation and Cognition: Foundations of Social Behavior,* 1, 167–203.

Ford, D. (1984) "Buyer/Seller Relationships in International Industrial Markets," *Industrial Marketing Management,* 13, 101–112.

Formisano, R.A., Olshavsky, R.W. and Tapp, S. (1981) "Choice Strategy in a Difficult Environment," *Journal of Consumer Research,* 8 (March), 474–479.

Fulk, J., Steinfield, D., Schmitz, JL, and Power, J.G. (1987) "A Social Information Processing Model of Media Use in Organizations," *Communication Research,* 14(5), 529–552.

Furse, D.H., Punj, R.N., and Stewart, D.W. (1984) "A Typology of Individual Search Strategies Among Purchasers of New Automobiles," *Journal of Consumer Research,* 10, 417–431.

Galaskiewicz, J. and Wasserman, S. (1989) "Mimetic Processes within an Interorganizational Field: An Empirical Test," *Administrative Science Quarterly,* 34, 454–479.

Ghymn, K., Srinil, B. and Johnson, P. (1993) "Thailand Import Managers' Purchasing Behavior," *Journal of Asia Business,* 9 (1), Winter, 1–11.

Grondin, D. (1991) "The Export Orientation of Female Entrepreneurs in

New Brunswick," paper presented at the *Academy of International Business Annual Meeting,* Northeast Region, Bermuda, June 3–7.

Hakansson, H. and Wootz, B. (1975) "Supplier Selection in an International Environment: An Experimental Study," *Journal of Marketing Research,* 12, 46–51.

Hallen, L. (1982) "International Purchasing in a Small Country: An Exploratory Study of Five Swedish Firms," *Journal of International Business Studies,* (Third Quarter), 99–112.

Hauser, J.R. and Wernerfelt, B. (1990), "An Evaluation Cost Model of Evoked Sets," *Journal of Consumer Research,* 16 (March), 393–408.

Heath, L. and Tindale, R.S. (1994) "Heuristics and Biases in Applied Settings: An Introduction," in *Applications of Heuristics and Biases to Social Issues,* Linda Heath et. al. (Eds.), New York, NY: 1–12.

Higgs, R. (1993) "Construction Services Consulting in China: Experience with Mixed-Use Projects," paper presented to World Trade Center Institute Conference *Trading with China,* Baltimore, MD, November 10.

Hogarth, R. (1980), *Judgement and Choice: The Psychology of Decision,* UK: John Wiley.

Jackson, B.B. (1985) *Winning and Keeping Industrial Customers: The Dynamics of Customer Relationships,* Lexington, MA: D. C. Heath.

Jacoby, J. (1984) "Perspectives on Information Overload," *Journal of Consumer Research,* 10 (March), 432–435.

Jauch, L.R. and Kraft, K.L. (1986) "Strategic Management of Uncertainty," *Academy of Management Review,* 11(4), 777–790.

Johnson, E.J. and Meyer, R.J. (1984) "Compensatory Choice Models of Noncompensatory Processes: The Effect of Varying Context," *Journal of Consumer Research,* 11 (June), 528–541.

Kahneman, D. and Tversky, A. (1973) "On the Psychology of Prediction," *Psychological Review,* 80, 237–251.

Kahneman, D., Slovic, P., and Tversky, A. (1982) *Judgment Under Uncertainty: Heuristics and Biases,* New York: Cambridge University Press.

Kahneman, D. and Tversky, A. (1982) "The Simulation Heuristic," in D. Kahneman, P. Slovic, and A. Tversky (Eds.), *Judgment Under Uncertainty: Heuristics and Biases,* Cambridge, UK: Cambridge University Press, 201–210.

Karafakioglu, M. (1986) "Export Activities of Turkish Manufacturers," *International Marketing Review,* 3 (4), Winter, 34–43.

Khanna, S.R. (1986) "Asian Companies and the Country Stereotype Paradox: An Empirical Study," *Columbia Journal of World Business,* (2), 29–38.

Keown, C.F. (1985) "Asian Importers' Perceptions of American Manufacturers," *International Marketing Review,* (Winter), 48–54.

Leenders, M.R. and Fearon, H.E. (1993) *Purchasing and Materials Management* 10th ed., Homewood, IL: Irwin.

Leonidou, L.C. (1995) "Export Stimulation: A non-exporter's perspective," *European Journal of Marketing,* 29(8), 17–36.

Liang, N. (1995a) "The Importer: A Missing Person in International Business Research—A State of the Art Review of Extant Studies," *The Ten Best Papers Proceeding*, the Academy of International Business Annual Meeting Northeast Region, Princeton, New Jersey, June 1–3, 75–98.

Liang, N. (1995b) "Soliciting Unsolicited Export Orders: Are Recipients Chosen at Random?" *European Journal of Marketing*, 29(8), 36–58.

Lilien, G.L. and Kotler, P. (1983) *Marketing Decision Making: A Model-Building Approach*, New York: Harper & Row.

Lurigio, A.J., Carroll, J.S., and Stalans, L.J. (1994) "Understanding Judges' Sentencing Decisions: Attributions of Responsibility and Story Construction," in L. Heath et. al. (Eds.), *Application of Heuristics and Biases to Social Issues*, New York: Plenum Press, 91–116.

Malhotra, N.K. (1982) " Information Overload and Consumer Decision Making," *Journal of Consumer Research*, 8 (March), 419–430.

Marer, P. (1980) *Dollar GNP of the USSR and East European Countries: A World Bank Research Publication*, Washington, DC: The World Bank.

McFadden, D. (1981), "Econometric Models of Probabilistic Choice," in C.F. Manski and D. McFadden (Eds.), *Structural Analyses of Discrete Data with Econometric Applications*, Cambridge, MA: MIT Press, 198–272.

Milliken, F.J. (1987) "Three Types of Perceived Uncertainty About the Environment: State, Effect and Response Uncertainty," *Academy of Management Review*, 12(1), 133–143.

Mintzberg, H. (1973) *The Nature of Managerial Work*, New York: Harper and Row.

Mintzberg, H., Raisinghani, D., and Theoret, A. (1976) "The Structure of Unstructured Decision Processes," *Administrative Science Quarterly*, 21 (June), 246–275.

Möller, K.E.K. and Laaksonen, M. (1986) "Situational Dimensions and Decision Criteria in Industrial Buying: Theoretical and Empirical Analysis," in Arch Woodside (Ed.), *Advances in Business Marketing*, Greenwich, CT: JAI Press.

Moore, J. and Whinston, A.B. (1987) "A Model of Decision-Making with Sequential Information-Acquisition," *Decision Support Systems*, 3 (1), 47–72.

Moriarty, R.T. (1983) *Industrial Buyer Behavior: Concepts, Issues, and Applications*, Lexington, MA: Lexington Books.

Moriarty, R.T. and Spekman, R.E. (1984) "An Empirical Investigation of the Information Source Used During the Industrial Buying Process," *Journal of Marketing Research*, XXI, May, 137–147.

Newell, A. and Simon, H.A. (1973) *Human Problem Solving*, Englewood Cliffs, NJ: Prentice–Hall.

Nohria, N. (1992) "Information and Searching the Creation of New Business Ventures: The Case of the 128 Venture Group," in N. Nohria and R.G. Eccles (Eds.), *Networks and Organizations: Structure, Form, and Action*, Boston, MA: Harvard Business School Press, 240–261.

Park, C.W. and Lessig, V.P. (1981) "Familiarity and its Impact on Consumer

Decision Biases and Heuristics," *Journal of Consumer Research*, 8 (March), 223–230.
Payne, J.W., Bettman, J.R. and Johnson, E.J. *The Adaptive Decision Maker*, New York: Cambridge University Press, 1993.
Payne, J.W. and Johnson, E.J. (1992) "Behavioral Decision Research: A Constructive Processing Perspective," *Annual Review of Psychology*, 43, 87–131.
Punj, G.N. and Staelin, R. (1983) "A Model of Consumer Information Search Behavior for New Automobiles," *Journal of Consumer Research*, 9 (March), 366–380.
Rao, A.R. and Monroe, K.B. (1988) "The Moderating Effect of Prior Knowledge on Cue Utilization in Product Evaluations," *Journal of Consumer Research*, 15, 253–264.
Ratchford, B.T. (1982) "Cost-Benefit Models for Explaining Consumer Choice and Information-Searching Behavior," *Management Science*, 28 (February), 172–212.
Rafaeli, A. (1993) "Tailored Meanings: On the Meaning and Impact of Organizational Dress," *Academy of Management Review*, 18(1), 32–55.
Roberts, J.H. and Lattin, J.M. (1991) "Development and Testing a Model of Consideration Set Composition," *Journal of Marketing Research*, 28 (November), 429–440.
Robinson, P.J., Faris, C.W., and Wind, Y. (1967) *Industrial Buying and Creative Marketing*, Boston, MA: Allyn and Bacon.
Samli, A.C., Grewal, D., and Mathur, S.K. (1988) "International Industrial Buyer Behavior: An Exploration and a Proposed Model," *Journal of the Academy of Marketing Science*, 16 (2), Summer, 19–29.
Schwartz, S. (1994) "Heuristics and Biases in Medical Judgement and Decision Making," in Linda Heath et al. (Eds.), *Application of Heuristics and Biases to Social Issues*, New York: Plenum Press.
Sherman, S. and Corty, E. (1984) "Cognitive Heuristics," in R.S. Wyer and T.K. Srull (Eds.), *Handbook of Social Cognition*, Hillsdale, NJ: Lawrence Erlbaum, 1, 189–286.
Sheth, J.N. (1973) "A Model of Industrial Buyer Behavior," *Journal of Marketing*, 37 (4), 50–56.
Simon, H.A. (1974) *Administrative Behavior*, 3rd ed., New York: Free Press.
Simon, H.A. (1989) "The Scientist as a Problem Solver," in D. Klahr and K. Kotovsky (Eds.), *Complex Information Processing: The Impact of Herbert A. Simon*, Lawrence Hillsdale, NJ: Erlbaum, 375–398.
Simon, H.A. and Associates (1986), "Report of the Research Decision Briefing Panel on Making and Problems Solving," *Research Briefings 1986*, Washington, DC: National Academy Press.
Sinmon, H.A. (1990) "Invariants of Human Behavior," *Annual Review of Psychology*, (41),1–19.
Smith, K. (1994) "Cognitive Heuristics in Students' College Choice," in Linda Heath et al. (Eds.), *Application of Heuristics and Biases to Social Issues*, New York: Plenum Press, 287–302.

Stalans, L.J. (1994) "Lay Evaluations of Encounters with Government Officials: Do Expectations Serve as Filters and Standards?" in Linda Heath et al. (Eds.), *Application of Heuristics and Biases to Social Issues,* New York, NY: Plenum Press, 137–162.

Stigler, G. (1961) "The Economics of Information," *Journal of Political Economy,* 69(June), 213–225.

Swamidass, P.M. (1993) "Import Sourcing Dynamics: An Integrative Perspective," *Journal of International Business Studies,* 24(4), 671–691.

Taylor, S., and Thompson, S. (1982) "Stalking the Elusive 'Vividness' Effect," *Psychological Review,* 89, 155–181.

Terpstra, V. and Sarathy, R. (1991) *International Marketing,* Chicago, IL: Dryden Press.

Tversky, A. and Kahneman, D. (1973) "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology,* 5, 207–232.

Tversky, A. and Kahneman, D. (1974) "Judgement Under Uncertainty: Heuristics and Biases," *Science,* 185, 1124–1131.

Vyas, N. and Woodside, A.G. (1984) "An Inductive Model of Industrial Supplier Choice Processes," *Journal of Marketing,* 48 (Winter), 30–45.

Webster Jr., F.E., and Wind, Y. (1972) *Organizational Buying Behavior,* Englewood Cliffs, NJ: Prentice–Hall.

Webster Jr., F.E. (1984), *Industrial Marketing Strategy* Second Edition, New York, NY: John Wiley.

White, P.D. (1979) "Attitude of U.S. Purchasing Mangers Toward Industrial Products Manufactured in Selected Western European Nations," *Journal of International Business Studies,* 10 (1), 81–97.

Wiener, R.L. and Pritchard, C.C. (1994) "Negligence Law and Mental Mutation: A Social Inference Model of Approtioning Fault," in Linda Heath et al. (Eds.), *Application of Heuristics and Biases to Social Issues,* New York: Plenum Press, 287–302.

Wilson, D.T. and Möller, K.E.K. (1990) "Managing the Buyer-Seller Relationship," in Westley J. Johnston (Ed.), *Advances in Telecommunications Management,* 2, 77–97.

Write, P. (1975) "Consumer Choice Strategies: Simplifying vs. Optimizing," *Journal of Marketing Research,* 12, 60–67.

Zenz, G.J. (1995) *Purchasing and the Management of Materials,* New York, NY: Wiley.