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#### Abstract

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The online marketplace is growing every year. As it continues to grow it is important to understand the interactions between online consumers and online merchants. This study examines the relationship between online merchants and online consumers focusing on how information is passed between the two. With consumers able to search and view dozens of stores in the time it used to take for many of them to drive to one, why are consumers not able to find the best price for the good they hope to buy? By examining past literature on information theory and consumer behavior, combined with considering a $3 \times 3$ sample of online consumers actually finding items in an online environment, this study will serve as a base for further research on what drives consumer interaction with electronic markets.


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# Consumer Behavior in the Online Marketplace: How Time and Access to Information Drive Consumer Decisions 

## Introduction

This study examines how consumers interact with online resources. Participants were asked to conduct a variety of online product searches to examine the methodology behind how consumers choose which products they would like to buy. This study should help illuminate any information gap which may impede consumers from fulfilling their search needs.

In today's information rich world, online consumers have a myriad of options available to them when searching for a product online. This study arises out of the observation that identical goods often are listed, and sell, for a wide range of prices. This research will examine the impetus behind the buyer's choice of where to purchase their items. In observing the research subjects, I will:
i) Examine if online consumers are aware of information needed to find the desired price and how they go about finding this price online
ii) Examine how time and price sensitivity motivate online consumers
iii) Consider how a potential information gap changes and affects consumer motivation

## Background

To consider how online consumers behave it is first important to understand how they retrieve information and use this information in setting their price valuation for certain items. By having a better understanding of information and consumer behavior, one can more efficiently observe a consumer in an information seeking frame.

As information behavior has changed over the past ten years due to the introduction of electronic media, information gaps between those who have information and those who do not have grown. In his 2001 book, Yakov Ben-Haim defines an information gap as, "Info-gap models concentrate on the disparity between what is known and could be known" (Ben-Haim, 2001). McEwen defines it as, "a gap between the 'information haves' and the 'information have-nots'" (McEwen, 1978). Similarly, Chatman referred to the two sides of the information gap as information insiders and information outsiders (Chatman, 1996).

The difference between the haves and have-nots can be closely examined within an information system. The online marketplace provides a good view into this imbalance. Consumers often make decisions based on information that they think might exist to help them, and sometimes the attraction of what "might be" is greater than the information at hand. Lynch talks about a mixed choice task situation in which consumers make their choices based on a combination of prior information from their memories as well as information they obtain from the external environment (Lynch et al., 1988). Ross and Creyer speak more specifically on how consumers react to missing information and how they react when they believe that they have complete information (even if more information exists that they do not know about) (Ross, 1992). Uncertainty
reduction for both product information and product valuation drives consumers to research a product when setting his or her personal valuation. In order to examine and illuminate this information disparity we must first examine the information behaviors of people in general, and then begin to narrow it down to how people behave within an online consumer environment.

Extensive literature has been written in the field of information science on how people search for and respond to information. In recent years, the importance of information behavior has expanded past the bounds of information science and has become a focus of many other fields. Wilson (1997) provides a strong overview of research on information behavior and how it is branching out to other disciplines. Wilson begins by identifying types of information needs such as the need to identify and recall and confirm information already known and the need to reduce a knowledge gap or uncertainty (Wilson, 1997). In the online marketplace the user (buyer) often has to bring out information not explicitly mentioned in the item description. In addition, to aid in the user's valuation of an item, he or she will look to support his or her initial valuation by finding information from other sources to confirm his or her initial judgment.

Wilson also illuminates that "a fundamental requirement for information-seeking is that some source of information should be accessible" (Wilson, 1997). This may sound to be a patently obvious statement, but he discusses further how "accessible" is a complex term. Wilson discusses throughout his article inhibitors which can make important information inaccessible such as class, status, and credibility, in addition to time.

This analysis leads Wilson to hypothesize that even if a source exists with the information the user is seeking, the user may still "doubt his or her capacity to properly access the source, or properly carry out a search" (Wilson, 1997). Wilson's research stresses the need to consider multiple variables and causes in investigating an information gap.

Dervin introduced a model for considering information gap, or communication gap, termed the sense-making approach. Dervin insisted that for the perfect situation of an information searcher being unhindered by time, space, or mind did not exist. "...human observing is not seen as capricious nor is variation in human observing seen as necessarily cacophonous." In fact, she suggests that the essence of communication is derived from the existence of this gap idea. (Dervin, 1991)

In searching for further understanding on what may cause an information gap we turn to Chatman's (1996) work on "The Impoverished Life-World of Outsiders". Chatman's article expands on the suggestion by Wilson (1997) that class and environment can have direct impact on the ability to satisfy an information need. Chatman (1996) stresses that barriers exist between information insiders and outsiders. Experienced online consumers can be considered as information insiders when shopping online, and inexperienced online consumers represent information outsiders. Thus, Chatman's (1996) work can help illustrate how information can be passed between merchants and consumers in the online marketplace.

Specifically, Chatman speaks of four relationships that exist between information insiders and outsiders: deception, risk-taking, secrecy, and situational relevance. She discusses how each factor affects the gap perpetuating the outsider's information poverty
and provides barriers to entry into the insider's world. An example of this is how many online stores do not allow their items to be indexed in main search engines, meaning that the consumer must find it from the merchant's site specifically. This is also illustrated in the way online merchants try and keep users on their sites to prevent them from learning of alternatives that may be selling at a lower price.

Chatman (1996) moves on to suggest a theory of information poverty. In this theory she provides analysis on how deception, risk-taking, secrecy, and situational relevance combine to keep outsiders from gaining the information they need. She gives examples of empirical studies to support her claims. In conclusion, Chatman calls for the need to eliminate these barriers in order to allow all who desire information the opportunity to obtain it freely.

These articles give a base for understanding information behavior. When considering the application of this research to the online marketplace, the relevance of information to economics and price valuation must be considered. Stigler (1961) wrote a seminal article on the relation of information and how it pertains to setting market price for an item. Stigler's empirical research conducted case studies on the prices for goods such as cars and coal and explains why prices for identical goods vary.

Stigler (1961) suggests time is the main inhibitor preventing the buyer from performing the search to find the best price. In 1961, when Stigler performed his experiments, the cost for sampling and comparing prices was relatively high. In his example of cars, the buyer would have to travel to each dealership for his or her data. With the advent of the internet and the increase of online communities such as Google, Craigslist, eBay and others, the cost to the buyer of finding available prices has
decreased dramatically. This suggests that buyers should be paying much closer to market price for goods online (Bakos, 1997). In practice however, this has not been found to be true (Lee, 1997; Bailey, 1998b).

Stigler also gives evidence supporting the findings of Chatman in his observation that "tourists (inexperience buyers) pay higher prices in a market than do experienced buyers" (Stigler, 1961). Stigler continues to explain that inexperienced buyers upon entering a new market have no idea of the costs for performing a search to improve their initial valuation, hence are reticent to change their initial valuation. Stigler (1961) quantifies the costs to the buyer.

One other factor he suggests is the larger the geographical size of the market, the larger the cost of price comparison. Stigler's analysis (1961) provides an illustration of how buyers create valuations and how the lack of information can drastically change those valuations. In today's online marketplace, consumers can compare a number of prices in the same amount of time that it would have taken them to drive to one store in the past. This would suggest that time is no longer as strong a factor in consumer price setting as Stigler's work suggests. Another goal of this study is to compare behaviors of experienced buyers with inexperienced buyers with respect to product choice and price.

This and many other prior works frame this research and suggest that it may be helpful to understand how online consumers make decisions when searching for products online. The goal of this research is to examine how consumers interact with an online shopping environment, and specifically how what is known by the consumer is influenced by, or is changed by the new information they are able to discover through
online searching. This is what I refer to as the information gap for the online consumer.
Yakov Ben-Haim Defines the information gap as:
An information-gap model of uncertainty is a non-probabilistic quantification of uncertainty. Info-gap models entail no measure functions: neither probability densities nor fuzzy membership functions. Info-gap models concentrate on the disparity between what is known and what could be known, while making very little commitment about the structure of the uncertainty. In formulating an infogap model, prior information about the uncertain phenomena is invested in determining the structure of a family of nested sets of events. [existing methods for determining product valuation for the consumer] Clustering of events is the central organizing concept of info-gap models of uncertainty, rather than frequency of recurrence, likelihood, plausibility or possibility of events.

This definition summarizes what we are considering an information gap for the online consumer and suggests that there is no metric which can be applied to all information gaps. This definition of information gap highlights the need to examine the explicitly dynamic decision theory of the online consumer. This feeling was also shared by Dervin who stated, "Gap is not to be seen as some earth-shattering event, rather, an everyday occurrence - an axiomatic mandate" (Dervin 1991).

This research considers how much information a consumer needs in the apparently limitless information world of the online consumer in order to make a satisfactory decision. What may seem to be sparse information to one consumer, may be sufficient, even superfluous information for a different consumer searching for the same product. By using a controlled case study approach coupled with follow up questions to address the consumer's motivations, these trials help decipher online consumer behavior.

## Methods

This exploratory study consists of a $3 \times 3$, counterbalanced study of online consumer behavior, and a follow-up questionnaire. The study group consists primarily of graduate students in library science who volunteered to participate. An open call for subjects was sent out and the first nine respondents were taken for the study

Subjects were brought in at their convenience for one hour in a simulated online shopping model. At the beginning of each subject's trial, there was a ten minute discussion with each participant to brief them on the study. The next half hour was spent conducting online searches for three goods.

The three products chosen were an Apple 30 Gigabyte iPod, a Kate Spade Sam Tote bag, and a portable Weber gas grill. These three products were chosen for many specific reasons. The first reason is because they encompass a wide price range. The iPod had a retail price of $\$ 299.99$, the Weber grill had a retail price of $\$ 129.00$, and the Kate Spade tote bag had a retail price of $\$ 190.00$. A wide range of prices was specifically chosen to consider how an increase in price of a good may effect the amount of time online consumers spend forming their valuation.

Each of these items was selected also because they were available at a wide variety of online stores for a wide variety of prices. Finally, these goods were chosen to represent three stable, broad markets in an effort to have some products that were familiar to each participant while also having some products where participants would not have a preconceived knowledge that would aid them in searching. At the beginning of each subjects trials, a printed page of the retail price and product information from the manufacturer's website was handed to them to offer them a starting valuation.

The nine participants were split into three groups of three people each. This was done to assess time as a variable for the online consumer in each task. Each group searched for one of three products but in different order and within different timeframes, allowing a three by three counterbalanced format for the results.

All groups will be presented with the scenario that they were just awarded a $\$ 700$ gift certificate good at any online store. They must buy an Apple iPod, a Kate Spade Sam Tote bag, and a portable Weber gas grill, and in this situation they would get to keep the remainder of this fictitious gift certificate. The first group was given five minutes to search for the iPod, ten minutes to search for the Kate Spade Sam Tote Bag, and fifteen minutes to search for the Weber grill. The second group was given five minutes to search for the tote bag, ten minutes to search for the grill, and fifteen minutes to search for the iPod. The third group was given five minutes to search for the grill, ten minutes to search for the iPod, and fifteen minutes to search for the tote bag.

## Table 1. Search Task Design by Group

|  | Apple 30GB <br> iPod | Weber Baby Q <br> Grill | Kate Spade |
| :---: | :---: | :---: | :---: |
| Group A | 5 minutes | 10 minutes | 15 minutes |
| Group B | 10 minutes | 15 minutes | 5 minutes |
| Group C | 15 minutes | 5 minutes | 10 minutes |

By segmenting the participants into these groups we will be able to analyze more closely how time relates to valuation. Throughout the exercise the participants were
asked to verbalize as much as they can about their search process. Each session was observed and noted to aid in analyzing the trials later.

When each trial began, the subject was told to find the best product at the best price and reminded each participant to consider shipping cost as well. No other direction was given, but questions were answered. Subjects were told that they could consider and use online coupons or codes in the task. Multiple subjects asked if it was okay to buy the product used or refurbished, and they were instructed to search for the best product for the best price. At the conclusion of each segment, the subject was told what the lowest online price available actually was. This was done in an effort to keep the consumer thinking about price valuation.

In addition to telling the participant to find the best product at the best price, each participant was asked to rate his or her familiarity with the product they were about to begin searching for on a scale of one to ten. The subjects were told each time that one should be considered as "I've never heard of this product or anything like it before", and ten should be considered as "I helped design, invent, and create this product". A one to ten scale was chosen in order to give each participant more flexibility in responding. This was done to bring out some notion of any prior knowledge base the consumer has with each product and examine whether this affects his or her search time and price realized.

After finishing this exercise, each student was given a questionnaire (see Appendix A). The purpose of the questionnaire is to assess the participant's familiarity with online shopping, to gauge their reactions to the task, and to identify the factors that the participants generally consider most important in making purchases. The final ten
minutes consisted of a debriefing session to engage the participant's responses and explain in full the aim of the study as well as address questions.

## Results

The results presented below are divided into two sections. The first section reports the observations and data recorded from each participants observed search task and this is followed by the data and results from the questionnaire each participant completed after his or her searching

## Online Search

Below is a table showing the time spent and price realized for each product:

Table 2. Search results by Group by Product by Time

|  | 5 Minutes |  |  | 10 Minutes |  |  | 15 minutes |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\underset{A}{\text { Group }}$ | iPod |  |  | Grill |  |  | Handbag |  |  |
|  | Product Knowledge | Price | Time | Product Knowledge | Price | Time | Product Knowledge | Price | Time |
|  | 8 | \$229.00 | 5:00 | 8 | \$ 153.75 | 4:00 | 1 | \$ 109.95 | 7:00 |
|  | 7 | \$279.99 | 5:00 | 1 | \$ 129.00 | 6:30 | 3 | \$ 109.95 | 7:00 |
|  | 4 | \$254.00 | 3:00 | 1 | \$147.95 | 3:00 | 3 | \$ 140.00 | 9:00 |
| $\begin{gathered} \text { Group } \\ \text { B } \end{gathered}$ | Handbag |  |  | iPod |  |  | Grill |  |  |
|  | Product Knowledge | Price | Time | Product Knowledge | Price | Time | Product Knowledge | Price | Time |
|  | 2 | \$119.98 | 5:00 | 3 | \$ 237.00 | 10:00 | 6 | \$ 119.97 | 7:30 |
|  | 4 | \$ 97.00 | 5:00 | 5 | \$ 279.99 | 7:30 | 2 | \$ 143.00 | 8:00 |
|  | 3 | \$109.95 | 5:00 | 2 | \$ 237.49 | 6:00 | 3 | \$ 119.95 | 8:00 |
| Group C | Grill |  |  | Handbag |  |  | iPod |  |  |
|  | Product Knowledge | Price | Time | Product Knowledge | Price | Time | Product Knowledge | Price | Time |
|  | 6 | \$143.00 | 5:00 | 2 | \$ 97.00 | 10 | 4 | \$ 210.99 | 15:00 |
|  | 2 | \$119.95 | 1:30 | 6 | \$ 89.00 | 7:30 | 6 | \$ 237.49 | 7:00 |
|  | 1 | \$128.99 | 5:00 | 2 | \$ 79.99 | 7:00 | 7 | \$ 220.00 | 6:45 |

Time spent searching for each product was rounded to the nearest 15 second interval if the subject completed his or her search before time expired. Each subject was told to print out, or bookmark the webpage of the product he or she choose to buy. This act signaled completion of the trial.

For purpose of analysis later, Table 3 shows average price realized for each product in each group as well as the average time spent by group:

## Table 3. Average Price and Average Time by Group

| Group A | iPod |  | Grill |  | Handbag |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Avg Price | Avg Time | Avg Price | Avg Time | Avg Price | Avg <br> Time |
|  | \$254.33 | 4.33 | $\begin{aligned} & \$ 143.5 \\ & 7 \end{aligned}$ | 4.43 | $\begin{aligned} & \$ \\ & 119.97 \end{aligned}$ | 7.67 |
| Group B | Handbag |  | iPod |  | Grill |  |
|  | Avg Price | Avg Time | Avg Price | Avg Time | Avg Price | Avg <br> Time |
|  | \$108.98 | 5:00 | $\begin{aligned} & \$ 251.4 \\ & 9 \end{aligned}$ | 7.83 | $\begin{aligned} & \$ \\ & 127.64 \end{aligned}$ | 7.83 |
| Group <br> C | Grill |  | Handbag |  | iPod |  |
|  | Avg Price | Avg Time | Avg Price | Avg Time | Avg Price | Avg <br> Time |
|  | \$135.32 | 3.83 | $\begin{aligned} & \hline \$ \\ & 88.66 \end{aligned}$ | 8.1 | \$222.83 | 9.58 |

The actual lowest price available for the Apple 30 GB iPod was $\$ 210.99$ on www.overstock.com. The lowest price available for the Weber Grill at the time of the study was $\$ 119.95$ with free super saver shipping on www.amazon.com. Finally, the lowest price for the Kate Spade handbag was $\$ 109.95$ from an online retailer at www.bluefly.com and $\$ 79.99$ on eBay

## Questionnaire

The questionnaire results showed all subjects had purchased items online. This is a product of self selection for an online consumer study as well as a limited sample size. As the study is aimed more at experienced online consumers, this is not seen as a limiting factor outside of small sample size. The most expensive item purchased online varied from fifty dollars to over 500 dollars. Question 4 asked whether the subject believe more time spent could have produced a better price. Table 4 below shows the percentage of people who said more time would benefit them both calculated both for time, and for each good.

Table 4. Perceived Benefit of Additional Time, by Trial and by Product

| Those saying they could have found better price with more time: |  |  |
| :---: | :---: | :---: |
|  | $\mathbf{5}$ minute trial | $77 \%$ (7 of 9 ) |
|  | $\mathbf{1 0}$ minute trial | $33 \%$ (3 of 9 ) |
|  | $\mathbf{1 5}$ minute trial | $33 \%$ (3 of 9 ) |
| iPod | $67 \%$ (6 of 9$)$ |  |
| Grill | $33 \% ~(3$ of 9$)$ |  |
|  | handbag | $44 \% ~(4$ of 9$)$ |

This table shows that most participants would have liked more time during the 5 minute search. Moving to a ten minute search drastically reduces the number of participants who believe they could benefit from more time, while moving from ten to fifteen minutes showed no further benefit to the online consumer.

The final question of note from the questionnaire was asking each participant what they valued most from shopping online and at conventional stores with an actual physically accessible building. The most important factors for these subjects when considered shopping online and in a conventional brick and mortar store are shown below in Table 5.

Table 5. Factors People Considered Most Important for Shopping

|  | Brick and Mortar | Online |
| :--- | :---: | :---: |
| Price | 3 | 6 |
| Convenience | 2 | 2 |
| Security | 1 | N/A |
| Recommendation/Reputation | 1 | 1 |
| Other (Sales staff) | 1 | N/A |

Twice as many respondents quoted price as the most important factor when shopping online while brick and mortar stores showed a much broader range of preferences.

## Discussion

This is an exploratory study, and although the three by three counterbalancing of the study allows for stable results, a larger study is needed. The simulated environment of the search also presents barriers to the study. A monetary study is naturally affected when the money being used is not real, and more importantly, not the subject's own
money. The motivation to find the best price for a good is muted to some extent because the exercise in searching is a simulation.

Regardless of this, the results show that further study is needed in looking to determine online consumer habits and the time needed for effective price valuation. Across all three goods and all three time segments, the average search time repeated settled between six and seven minutes. In addition, out of the 27 searches total, there were 13 cases where the searcher said they believe they could have found a better price if allowed to search for longer. Seven of these examples were found in the five minute search frame. Only one of the nine participants searched past ten minutes for a good even when given fifteen minutes (iPod), and his or her search produced no further price benefit.

In other words, seven out of nine, or $77 \%$, of searchers given only five minutes felt they would benefit from additional time, while only six out of eighteen, or $33 \%$, of all other searchers believed they would benefit with additional time. The results showed no increase in the number of subjects who could have used more time between the ten minute and the fifteen minute, suggesting that there is no added benefit to the additional time given to the consumer after their initial ten minutes of searching.

When we break this down by product we find that six of nine participants, or $67 \%$, of iPod searchers felt they could have benefited with more time. Four out of nine, or $44 \%$ of searchers for the Kate Spade bag felt they could have benefited with more time, while three of nine, or $33 \%$ of searchers for the Weber grill could have benefited from more time.

It should also be noted that it was a surprising result that familiarity with each product did not appear to have any correlation with search effectiveness with regards to price, or time spent for each search as seen in Table 2. It would make sense, as previous consumer research suggests that the more familiar a consumer is with a particular good, the less time they need to form their product valuation and determine their willingness to pay a particular price (Ratchford, 1982; Bakos, 1997).

The final question addressed in this study is whether a price threshold exists where consumers need more time to search online. In this study the goods ranged from a retail price of $\$ 129.00$ to a retail price of $\$ 299.95$. Independent of the time frame, searchers for the iPod (retail price $\$ 299.95$ ) stated they would like more time to search six of the nine searches, or $67 \%$ of the time. Searchers for the handbag (retail price $\$ 190.00$ ) would have liked more time four out of nine searches, or $44 \%$ of the time. Searchers for the Weber grill (retail price \$120.00) stated they would have benefited from additional time in three of the nine searches, or $33 \%$ of the time.

This result follows the pattern of the higher the cost of the good, the more time needed for a consumer to set his or her valuation of the good. This is in full support of Stigler's findings that people will continue to search until the possible price benefit in finding a lower price is outweighed by the cost to the individual of gathering more information. The higher the price of a good, the higher the possible savings can be, therefore the more time someone is willing to search for a good. This is as expected, however, the findings show that even those subjects who said they could have used more time did not use more time, but rather stopped searching after six or seven minutes. This may be due in part to the limitation that the participants are not in reality buying these
goods. The specific threshold of six or seven minutes which seemed to reappear for such a large number of searches is something that should be examined further.

Another limiting factor for these trials was the free nature of all participants to choose to purchase any instance of the product being searched for. In the case of the iPod this caused some to purchase refurbished iPods at a largely discounted rate and in the case of the Kate Spade handbag some purchased used handbags and in at least one case a handbag that was a definite replica and fake. In both cases the lowest prices for both of these products were either refurbished or non-authentic. This is of interest and worth noting for online consumers, but for purpose of analyzing consumer valuation for specific products this included an extra variable which allowed alternative products to be chosen. In order to do a more comprehensive study of price sensitivity to information for online consumers products need to be controlled even more than they were in this study.

## Conclusions

In closing this study raises as many questions as it set out to answer. I initially aimed to focus on the information gap between consumers and product price information in an online environment. A primary motivation was to consider this gap in the frame of consumers being divided into either information insiders (experienced online consumers) or information outsiders (inexperienced online consumers). This directly attempts to answer the initial research question examining if online consumers were aware of information needed to find his or her desired price.

This phenomenon would suggest that consumer success in an online price search would be directly related to his or her familiarity with the product being searched and the tools available for searching. In other words, success would depend on his or her awareness of what information is available in the frame of Dervin's sense-making approach which, defined broadly, deals with an individual's set of assumptions about reality, observing, power and the narrative: "Information is a human tool designed by human beings to make sense of a reality assumed to be both chaotic and orderly".

We find in this study that this is not the case, possibly due to the small sample size used in the study or the lack of such a phenomenon existing at all for online consumers. One possible explanation for this is that for online consumers, all consumers are information outsiders regardless of their familiarity with a product, while only the sellers or retailers are information insiders in the frame proposed by Chatman. In Dervin's sense-maker frame it suggests that the consumers' assumptions about reality are far different than the seller's reality. Further research is needed to explore the relationship between familiarity with a product and the ability to locate a suitable source.

I also hoped to determine the relationship between time and price sensitivity for online consumers. Stigler showed how time was directly linked to valuation and assigned cost benefit equations showing that when the cost of additional time exceeds the lower price benefit a consumer will cease looking for a better price. With time costs lower in an online environment, Stigler's time model should suggest that the lowest price would always be found, yet this study showed that regardless of finding the best price, the optimal search time seemed to be set between six and seven minutes. Any amount of time over a seven minute threshold did not prove beneficial for the online
consumer, and most consumers did not even bother extending his or her search past this threshold.

This potential finding of a time threshold is very interesting as it has the potential to challenge the premise that Dervin's concept that an information gap "describes an ordered reality that varies across time and space" (Dervin, 1999). Dervin's sensemaking theory, as well as Ben-Haim's definition of information gap fits perfectly for the time each participant spent searching, but if there does in fact exist a time threshold then information gap theory is not indeed independent of time and space.

This exploratory study, though small, provides a framework for further research on online consumer behavior. Participants in this study demonstrated a fixed attention span of approximately six-to-seven minutes for an online search. Understanding the factors that might extend this limit (or shorten it) would be useful to vendors, to information providers, and to online customers themselves. While results of this study suggest that online consumers behave differently from the used car buyers framed in Stigler's research, it may be that a study which focuses on the real needs of consumers for real products will discover different behaviors.

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## Appendix A: Questions for subjects after search exercise

1. Have you ever Purchased anything online?

- Yes
- No

2. What was the cost of the most expensive item you purchased online?

- 0-\$10
- \$10-\$50
- \$50-\$100
- \$100-\$200
- \$200-\$500
- $\$ 500$ and above

3. Of your last 10 non-essential purchases, how many were made online?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

4. Do you think if you were given more time, you could have found a better price for the items in this exercise?

Item A

- Yes
- No

Item B

- Yes
- No

Item C

- Yes
- No

5. How much more time do you think you would need to find a better price?

Item A

- 0 , I found the price I wanted
- Up to 10 minutes
- 11-20 minutes
- 20-30 minutes
- 30-45 minutes
- 45-60 minutes
- Over 60 minutes

Item B

- 0 , I found the price I wanted
- Up to 10 minutes
- 11-20 minutes
- 20-30 minutes
- 30-45 minutes
- 45-60 minutes
- Over 60 minutes

Item C

- 0 , I found the price I wanted
- Up to 10 minutes
- 11-20 minutes
- 20-30 minutes
- 30-45 minutes
- 45-60 minutes
- Over 60 minutes

6. If you had that time, would you continue to look to find a lower price on any of these items? Explain why or why not
7. What is the \#1 factor when buying an item at a brick and mortar store?

- Price
- Security
- Convenience
- Recommendation / Reputation
- Other $\qquad$

8. What is the \#1 Factor in buying online?

- Price
- Security
- Convenience
- Recommendation / Reputation
- Other $\qquad$

9. Describe how online searching and shopping have changed you as a consumer.
10. After doing this exercise, name 5 online sources you would use in the future for finding a product online. Please list them in the order you would search them. (if you would use fewer than 5, please explain)
