THE LIMITED CONSUMER RATIONALITY AND THE ROLE OF ENVIRONMENTAL CUES

Mădălina Bălău

Danubius University of Galaţi, Romania

Abstract

The ideal of rational consumer rests on the assumption that individuals already hold perfect information and consumer behavior results from the preferences based on this information. Today, consumers enjoy access to more information than ever before, but, on the other hand, they frequently reach decisions with limited deliberation. With its flow of information, does the age of the Internet encourage the ideal of consumer rationality? Our aim is to explore the role of social influences and environmental cues on consumer online behavior and to derive implications for improving our understanding of online behaviors. Research findings on influence tactics highlight an increasing importance of social cues in assessing online information, while experiments in social psychology reveal the role of unconscious processes in automatically activating attitudes and behaviors. We discuss implications for developing our understanding of online consumer behavior and advancements necessary for consumer research.

1. Introduction

Decision making and consumer behavior are thought, traditionally, to result from individual information processing that leads to certain attitudes influencing subsequent behavior (Ajzen & Fishbein, 1980). Consumers will choose a certain product or service after comparing the costs and benefits of each alternative. This more elaborated information processing takes place for expensive products, with important long-term consequences for the individual (Chaiken, 1980; Petty, Cacioppo, & Schumann, 1983). However, more frequently consumers do not engage in thorough information processing before making decisions, such as when they make daily and repeated decisions, when they decide on impulse or when they act without obvious consequences.

Many online behavioral decisions result from a limited analysis of costs and benefits, since they are only a click away and their consequences seem to be inexistent or inexpensive for the consumer. This is the case for behaviors such as game and applications downloading, subscribing to various online channels or reacting to online content. Nonetheless, these behaviors have an increasingly important impact, at aggregate level, determining company

investments and having macroeconomic consequences. At individual level, online behaviors also impact the consumers' life by changing their habits and their spending choices in terms of money and time, yet these consequences remain mostly invisible to consumers. Thus, online behavior is a special kind of consumer behavior characterized by fast decision-making with few immediate individual consequences, but with an important aggregate impact.

Although the ideal of consumer rationality has long been criticized (Scott, 2000, Simon, 1957) or given various interpretations and developments (Lancaster, 1966; Samuelson, 1938), the current context of online consumer behavior challenges this view even more. The rational consumer is considered to access and process all information needed, to make a decision without social influences (or at best they are internalized as stable set of beliefs on social norms) and to hold stable preferences, which are not influenced by context (Jackson, 2005). However, today consumers have access to more information than ever before in history, they are demanding for e-commerce platforms that embed social interactions and they still exhibit impulse buying behaviors.

The online consumer behavior brings forefront some aspects that were ignored in the past: the social influence and the context's impact. Also the Internet facilitates access to information, thus possibly driving consumers closer to that ideal of perfect information. So, what the main developments with respect to the ideal of consumer rationality that are facilitated by consumers' use of the Internet in their decisions? This paper aims to explore the role of social influences and environmental cues on consumer online behavior and to derive implications for moving forward the understanding of consumer behavior in online settings.

Multiple tactics are aimed at influencing consumer behavior to make decisions faster and thus with reduced information processing. Many of these tactics use various social cues that determine impulsive behaviors, but consumers may become aware of them and develop defensive strategies, if they wish to do so (Cialdini, 2001). Other times consumers seem to make decisions unconsciously, without a deliberate information processing. Dijksterhuis, Smith, van Baaren and Wigboldus. (2005) illustrate how consumers simply bypass the deliberation process and, instead, are influenced by environmental cues. These may consist of elements related to the structure of choice, such as the website features, or may be driven by social cues with direct influence on behavior.

This article is divided into three parts. First, we present an overview of the mechanisms that explain consumer decision-making with limited deliberation. We identified two types of influence mechanisms: those of which consumers may become aware of and those that function only at an unconscious level. Secondly, we summarize research findings on how the influence mechanisms impact consumers' online behavior and how social validation influences their assessment of information credibility. Finally, we derive implications for the ideal of consumer rationality in online decision-making context and we propose future research directions for improving consumer behavior models.

2. Mechanisms of Individual Decision-Making with Limited Deliberation

Consumer choice with limited deliberation is explained through various mechanisms and mediating concepts, such as habits, the automatic attitude-behavior link, impulse decisions, a multitude of social influence tactics and a direct perception-behavior link (Cialdini, 2001; Dijksterhuis, Smith, van Baaren, & Wigboldus, 2005; Dittmar, 2008; Fazio & Olson, 2014; Ouellette & Wood, 1998;).

Frequently-made decisions are usually explained by the concept of habit, which is a repeated behavior that was the result of a previous information processing stage. The habit produces satisfying consequences to the consumer and therefore the behavior that is simply replicated in the future and acquires certain automaticity. Ouellette and Wood (1998) defined

habits as behavioral tendencies towards repeating a certain action when the context is stable, thus being highly dependent external cues. From a learning process perspective, habits are described as a mental mechanism that enables us to free up cognitive capacity for the more difficult tasks, while the habitual ones are performed automatically (Maslow, 1954).

Although, the proponents of consumer behavior models based on the expectancy-value theory consider habit as already included in the attitudes towards a behavior (Ajzen & Fishbein, 1980; Ajzen I., 1985; Fishbein & Ajzen, 1975), habitual behaviors often bypass the deliberation process. Due to its automatic action initiation mechanism, habit is worth considering in addition to intention and attitudes towards a behavior, both for future behavior prediction and for behavioral change.

In their meta-analysis, Ouellette and Wood (1998) tested whether past behavior and intention predicted differently subsequent behavior depending on the situation's characteristics in terms of opportunity and stability. Their findings confirm that habit predicts the behavior better in stable and favorable contexts, while for shifting contexts, intention performs better as predictor of future behavior. Thus, since habits and intentions determine subsequent behavior differently depending on the choice context, the environmental cues can trigger habit activation in consumers.

Another mechanism explaining the decision-making with limited deliberation is the automatic attitude-behavior link, which is explored by Fazio (1990) in the MODE model. Contrary to the popular idea that attitudes determine behavior through the mediation of intention, Fazio (1990) proposes that attitudes and behavior are directly linked. This automatic attitude-behavior mechanism is used in spontaneous decision-making, a frequently encountered type of decision-making. Fazio and Olson (2014) note that the deliberative decision-making process, which involves the analysis of costs and benefits is rooted in the ideal of the rational consumer, is far less used by individuals, only when they have the opportunity and motivation to do so.

Fazio and Olson (2014) posit that the external stimulus automatically activate consumer attitudes, which then trigger a subsequent behavior directly. Thus, consumers do not hold a fixed set of attitudes towards behaviors as if they would hold a box of tools and as the Theory of Planned Behavior suggests (Ajzen, 1985). Rather, individuals hold an immense variety of attitudes that become salient only when triggered by cues in the environment.

An alternative justification for consumer decision-making with limited information processing is that sometimes consumers make impulse decisions and attitudes are completely bypassed, thus their cognitive processing. An impulse decision of particular interest in consumer behavior is the impulse buying decision, which has three main characteristics: it takes little deliberation and planning, it involves high emotional feelings from consumers and it makes individuals completely neglect the constraints and consequences of that decision (Dittmar & Drury, 2000). Thus, the impulse buying decision is a situation where consumer passion overtakes deliberation. Dittmar (2008) suggests that impulse buying decisions occur mostly for goods that are symbolically linked to that individual's self-concept.

Cialdini (2001) also explored the mechanisms that drive individuals to impulse decisions and to accept offers. Instead of looking at a symbolic link with goods, Cialdini highlights a series of social influence tactics that lead to impulsive reactions. He identifies six fundamental psychological principles behind them: the priciples of scarcity, reciprocity, liking, consistency, authority and social proof. These principles are often recognized as the basic elements of marketing tools aimed at influencing consumer behavior. Their main characteristics are highlighted below:

1. *Scarcity*: Individuals value more the offers in short supply and react faster to those which highlight an advantage they may lose.

2. *Reciprocity*: Individuals are inclined to pay back for the favors received, due to a feeling of indebtedness towards the person who offered the "gift" first.
3. *Liking*: Individuals allow others they like to influence or persuade them. This functions mainly through similarity to others or through being praised by others.
4. *Consistency*: Individuals will try to stick to their previously reported opinions or behaviors.
5. *Authority*: Individiuals give in to persuasive messages from experts. Expert opinions make valuable and efficient short-cuts for good enough decisions.
6. *Social proof*: Individuals follow the behavior of others, especially in ambiguous contexts.

These principles of influence have been frequently used in various contexts of social interaction. Initially, the sales context was the place where these principles were discovered, yet they are ment to function in other social interaction settings as well. Cialdini (2001 b) recommended managers to use them in order to persuade colleagues and subordinates to change behavior and he highlighted their potential to increase the results of fund-raising initiatives through a combination of these principles (Cialdini, 2003).

Finally, the research on the direct link between perception and behavior illustrates situations when behavior is triggered unconsciously for the consumer. Dijksterhuis Smith, van Baaren & Wigboldus (2005) review the findings on this perception-behavior link and conclude that environmental cues play a major role in influencing subsequent behavior through their mere perception. These cues impact directly the behavior, at an unconscious level, by inducing certain behaviors or goals on the subjects. In many instances, social perception is involved in triggering the automatic behavior, as it activates a representation in the individuals mind with direct effect on the social behavior (Dijksterhuis & Bargh, 2001).

Imitation represents a direct consequence of the perception-behavior link. Dijksterhuis and Bargh (2001) investigated the role played by imitation on the decision to enact a behavior and they identified two ways in which imitation intervenes: the low and high road to imitation. The low road relates to a simple imitation of the observable behavior, such as when people mimic gestiures, facial expressions and speech characteristics. The high road implies a more complex imitation effect, when people try to imitate traits, goal and stereotypes of important others.

Automatic mimicry is recognized as an innate human ability, which plays a role in the learning from others' behavior. The automatic mimicry is enabled by mirror neurons, as the findings on their functioning reveal (Decety & Grezes, 1999). Iacoboni (2005) found that whenever individuals practice or observe an action the same areas in the brain get activated. Thus, if the same brain's regions are involved in coding own goals and intentions as well as those of others, then imitation provides also a means of understanding others' actions. Yet, even though imitation enables individuals to understand others, it also provides an automatic behavioral response that the person is not aware of.

Johnston (2002) tested the influence of mimicry on behavior in an experimental study and found a statistically significant effect on behavior. In the experiment, subjects were asked to eat ice cream in the presence of another person, who was instructed to eat a small or a large sample according to the assigned experimental group. The subjects in the experimental condition mimicked the behavior of their peer.

Chartrand and Bargh (1999) tested experimentally whether mimicry impacts the sympathy felt by a peer and found that subjects who were imitated in the experiment liked more their peer than those who were not imitated by their partner. Van Baaren, Holland, Kawakami and van Knippenberg (2004) found that mimicry also encourages pro-social behavior; in their studies, participants were more helpful and generous if they had been mimicked and they directed these

behaviors not only towards the mimicker but also to others, outside the strict context of mimicking.

Several studies on the effects of priming on subsequent behavior indicated a significant priming effect through the activation of goals, traits of personality and stereotypes in the mind of the participants. Carver, Ganellen, Froming, and Chambers (1983) primed subiects with the concept of hostility by exposing participants to an aggressive model and they were influenced by displaying a more aggresssive behavior subsequently or by interpreting others' behaviors as more aggressive. Bargh, Chen, and Burrows (1996) tested experimentally the effect of priming participants with the concept of rudeness and with certain stereotypes, an elderly stereotype and an African American stereotype, and in all cases they observed an automatic bevior inducing effect. Dijksterhuis and van Knippenberg (1996) studied as well the effects of stereotype activation on the cognitive performance in tests or on the speed of their reactions. In the experiments, they asked different groups of participants to read descriptions of older people, teachers and hooligans and the priming procedure facilitated or inhibited their performance in the tests applied.

The direct link of perception with automatic behavior activation illustrates that the influences on decision-making are subtle and bear an unconscious dimension. Individuals are more sensitive to social influences than posit popular consumer behavior models, such as the Theory of Planned Behavior of Ajzen (1985). Additionally, social perception has the biggest impact on subsequent behavior, as individuals react more frequently towards others' behaviors and less frequently to environmental cues outside the human context. Thus, individuals are even more sensitive to the social influences than would suggest Cialdini (2001). The social influence tactics he identified are a part of the determinants of behavior that could be observed once the consumer becomes aware. However, the direct link between perception and behavior inform us that this relationship resembles more a reflex reaction, without any cognitive processing.

3. Influences on Consumer Behavior in Online Social Contexts

In June 2018 there were over 4 billion Internet users, most of them being located in Asia, 49%, followed by Europe, with 16,8% users, and Africa with 11% users of the total number of Internet users worldwide (Internet Usage Statistics, 2018). However, the highest penetration rate can be found in North America, where 95% of the population uses the Internet, followed by Europe with a 85,2% penetration rate.

The increasing use of the Internet and the intensified online interactions made it an interesting plaform for various attempts to influence others. Fogg (2003, p.1) recognized the importance of technology in attampts to change consumer attitudes and behaviors and termed this class of technologies 'Persuasive Technology'. Besides being a topic of interest, the online social interaction is also charaterized by some particular features that enable the users more control over the timing and location of the interaction, the degree of anonimity, the physical appearance and the physical distance (Guadagno, Muscanell, Rice, & Roberts, 2013). These charasteristics have an impact over the functioning and the effectiveness of the persuasion strategies.

Guadagno and Cialdini (2005) reviewed the influence of the authority and consistency principles of persuasion in online contexts and found the principles have different degrees of influence compared to the face-to-face interaction. The authority principle in online context has encountered a higher compliance to the influence agent, but the influence was diminished compared to an interactive context. The consistency principle, however, seemed to be as effective in computer-mediated contexts as in other communication means. In following article, Guagagno, Muscanell, Rice, & Roberts. (2013) examined how effective are the principles of liking and social proof in online influence. The higher the social validation, defined as the

number of individuals agreeing to a online request, the more influence it exerted on individuals to agree to the request. However, the likability of the blogger, although it was noticed, didn't influence participants to comply to the request.

Orji, Mandryk, & Vassileva (2015) tested the impact of Cialdini's persuasion principales in online context and explored the difference in compliance by gender and age. In general, the most effective persuasive strategies were consistency and reciprocity. However, females were persuaded easier with the principles of reciprocity, consistency and social proof than men, suggesting that peer presure impacts more this group. With respect to age, younger adults responded more to scarcity, while adults were persuaded more by the consistency principle.

The social interaction in the online environment is an essential feature that has contributed to important changes in the e-commerce activity. This type of online commerce, which is termed 'social commerce', incorpoates tools and interfaces that facilitate social interaction and help leveraging sales (Huang & Benyoucef, 2013). According to Dennison, Bourdage-Braun, & Chetuparambil (2009), implementing social commerce means including the word-of-mouth into the e-commerce activity, but the concept also refers to the use of social media applications in the interaction with consumers. All these developements impact the marketplace and the ways businesses interact with their public, transforming it into a user-driven one (Wigand, Benjamin, & Birkland, 2008).

As we discussed above, impuse behavior is one of the examples when consumers make decisions with limited or without cognitive deliberation. Impulse online buying behavior is an important phenomenon to study since it is a type of behavior frequently observed in retail sales (Hausman, 2000) as well as in online contexts (Li, Kuo, & Russell, 1999). Wells, Parboteeah, & Valacich. (2011) conducted two experiments in order to test the impact of online environment cues and consumer impulsiveness on impluse buying behaviors. They tested the website quality as a determining environmental cue and they found it has a significat role in influencing online impulse buying. The website quality was operationalized as a perceptual value with three dimensions: the security, the navigability and the visual appearance perceptions of the website. They conclude that relevant environmental cue (i.e. a high website quality) stimulates consumer impulsiveness and induces impulse buying behaviors, while less relevant cues (i.e. lower quality websites) negatively influence impulse buying.

Amblee & Bui (2011) investigated the effect that online word-of-mouth has on sales and on the brand and product reputation. They studied the consumers' information exchange, recommendations, shared thoughts and conversations about books and author quality on Amazon.com. Their findings revealed that the amount of shared online information about a products doesn't only help users make evaluations and decisions, but it also directly influces the products's sales performance. The more the product reviews are available, the more product sales are generated, and the rating score is less associated with sales as long as the number of reviews is smaller. In other words, the more an item is reviewed the better sales it enjoys, no matter the review score.

Consumers interaction with the online content and their usage of online information in decision-making also raise the question of consumers' capability to evaluate credibility of online information. Individuals have always evaluated the credibility of information through social means and not in isolation (Metzger, Flanagin, & Medders, 2010). Traditionally, the credibility of information is assessed by referring to some recognized institution or expert that provides the reliable information. This was a good enough solution when people lived in a world where the information was scarce. However, as Callister (2000) argues, the current context of abundant online information makes this convention for evaluating information credibility insufficient for the fast pace in which consumers need to make choices. The online environment

allows individuals to access large amounts of information from a wide variety of sources, so they also have a new need: to assess credibility while saving cognitive effort and time.

Since individuals need to cope with a problem of information overload and uncertainty in the online environments (Sundar, 2008; Taraborelli, 2008), they resort to several heuristic strategies. Metzger, Flanagin, & Medders (2010) explored how individuals use such strategies to assess information credibility online, so that they can reach a decision fast enough and without a high cognitive effort. One dominant characteristic identified is the social arbitration, which means that individuals use online social networking, online assessments and online reputation systems to judge the information and source credibility.

In their study, Metzger, Flanagin, & Medders (2010) identified five heuristics used by individuals in online contexts: reputation, endorsement, consistency, expectancy violation and persuasive intent (p. 425). These heuristics fall in two major categories, namely heuristics based on social confirmation and heuristics rooted in expectations from the context:

- The reputation heuristic – information is credible when it is published on well-known websites.
- The endorsement heuristic – information is credible if others consider it as well (by sharing, liking, etc.) without further evaluation of website content or information source.
- The consistency heuristic – information is credible when individuals can cross-validate it through several information sources; this heuristic requires more cognitive effort from participant.
- The expectancy violation heuristic – information is credible if the website meets readers' expectations in terms of appearance, layout, features, functionality and comprehensiveness; online sources which fail to meet the reader's criteria in terms of layout in considered less credible.
- The persuasive intent heuristic – information that is perceived as advertising, commercial or persuasive is generally considered not credible.

The main observation of Metzger, Flanagin, & Medders (2010) study is that individuals resort to distant information sources that they consider relevant through social evaluation mechanisms. This means that relevance and credibility is assessed through social information pooling and priviledging personal opinion confirmation, passionate recommendations and resources shared by familiar others. Thus, the notion of 'social proof' proposed by Cialdini (2001) supports the reputaion, endorsement and consistency heuristics, and therefore make individuals efficiently evaluate credibility (i.e. they reach a decision on the information at hand faster and with less cognitive effort) but are subject to manipulation influences. Credibility assessment through social proof can be erroneous since it is based on crowd behavior and it equates popularity with credibility. In addition, individiuals may reject information as not credible if it disconfirms their personal opinion or expectations, leading thus to a narrowing of information avaliable to the individual though his/her own choice to ignore competeing opinions.

The online visibility of individuals is subject to similar credibility evaluations and the social network of the individual influences the importance of his/her online presence. Stoica, Riederer & Chaintreau (2018) observe that the online visibility of individuals, which depends on their social network, grows mainly with the help of the referral systems embedded in social media platforms. Thus, the y tested whether the social recommendation algorithms affect the representation opportunities of different demographic groups, and especially if there are significant gender gaps enhanced or diminished by these algorithms.

Indeed, Stoica Riederer & Chaintreau (2018) documented a reinforcement of the representation gender gap through the referral function in Instagram's recommendation

algorithm. They describe the effect observed as 'an algorithmic glass ceiling' for women that can be explained by the phenomenon of 'differentiated homophily' (Stoica, Riederer, & Chaintreau, 2018, p. 2). This phenomenon implies that individuals favor interactions with similar others, so in this case men support more other men, while women don't favor other women. The algorithm does not create this type of behavior, so it might be considered legitimate as it only reflects a pre-existing behavior in the human society. However, combining this finding with those related to the limits of online information processing, the effects on limiting representation may increase with the information volume and create unwanted social effects. Stoica, Riederer & Chaintreau (2018) suggest that a good structural understanding of the causes should be encouraged in order to improve referral algorithms and reduce bias towards an over-representation of male postings.

The recognized importance of social influence on consumer behavior in online contexts raises also a concern over the attempts to manipulate individuals' decisions and behavior through online information and stimulus. An increasingly visible concern comes from the activity of social robots, or bots, which are software robots that mimic human behavior online.

Bots are defined as a computer algorithms that produce content and interact with users on social media, in order to influence their behavior (Ferrara, Varol, Davis, Menczer, & Flammini, 2016). These bots are fulfilling mainly benign tasks and are useful in the achievement of different automatic functions. Yet, the activity of social bots may become problematic when they are used to share rumours or wrong information. They enable manipulation attempts by giving individuals the false impression that some piece of information is popular and endorsed by many people, thus increasing its credibility through social proof.

Social bots can and are used to alter the impression of popularity and support for certain political campaigns and candidates (Ratkiewicz, Conover, Meiss, Goncalves, Flammini, & Menczer, 2011), they may increase panic feelings during emergencies and they can even alter stock market fluctuations (Hwang, Pearce, & Nanis, 2012). Although Ferrara, Varol, Davis, Menczer, & Flammini (2016) describe the functioning of several detection systems that could be used to identify social bots, the biggest problem for individuals is that they lack the necessary abilities to use them on their own. As the proponents argue, each of the described detection system has its imperfections and their best use is possible when they are combined.

Thus, the biggest problem related to the influence of social bots comes from the inability of humans to recognize bots in social media. To counter this problem, individuals should become knowledgeable of online influences directed at them as well as of their own vulnerabilities. Additionally, it might not be enough for consumers do learn how to detect social bots but it is necessary to profoundly understand the online and social transformation taking place with increased usage of the Internet. The development of social bots implies that there are many actors interested in influencing consumer (or individual) actions. However, our level of knowledge on factors of social influence on online consumer behavior is at its infancy, and today consumers more often feel fooled and puzzled than knowledgeable of the market and self-aware of their own needs, wants and rationality.

4. Moving Forward the Understanding of Online Consumer Behavior

The consumers' online social interaction enhances some characteristics of consumer behavior that were mostly invisible and thus ignored in the past. The influence of social and environmental cues is now quite well documented in research results and there are convincing arguments to be integrated in models of consumer behavior. As well, the cognitive limitations of consumers in relation to the high volume of online information should be translated in attempts to better understand consumer decision-making skills and the ways in which they can be developed. Since the premises of the rational consumer ideal are contradicted, consumer

researchers should start developing a new view on consumer rationality, adapted to the current reality. Consumer rationality is not an inborn ability that everyone posseses, but it is dependent on an interaction of factors coming from the social environment and the individual self. Also consumers' abilities in decision-making are prone to multiple errors and vulnerabilities.

Consumer behavior in the online environment is still an emerging field of research which needs further exploration. The behaviors resulting from the online social interaction are dependent on the particular features offered by this environment: consumers have more control over engaging or not in the interaction and over when and how they will communicate. These characteristics of online social interaction apparently encourage an internal focus, which may enable consumers to hold back their implusiveness. However, many studies on impluse online behaviors confirm that consumers continue to be impulsive online, yet this type of behavior is dependent on the features offered by the computer-mediated communication tool.

Social influence has been proved to play a major role in determining online consumer behaviors, yet there are important differences compared to the traditional face-to-face interactions that are worth noting. The effectiveness of each of the influence principles proposed by Cialdini (2001) differs in the online interaction: the consistency and the social proof principles have greater effectiveness, while the authority and liking principles face a reduced impact in influencing online behaviors. This might imply that online consumers are more concerned with maintaining a coherent self-concept and non-contradicting themselves, on one hand, and adjusting their self-concept to the relevant social context, on the other hand. Future research should explore the construction and significance of consumers' online identity as well as the importance of self-concept in accepting or rejecting the influence of tactics aimed to persuade them.

Social validation is also highly used by consumers in assessing online information credibility. The increasing volume of information available online leads to costs of cognitive processing (in terms of effort and time) and in order to cope with them individuals resort to heuristics for a faster decision-making. Most of these heuristics are based on social validation and confirmation of personal expectations, both of which are prone to errors. Online information shared or endorsed by many is considered more credible and thus, individuals equate credibility with the popularity of an opinion. Also, the online information that corresponds to own expectations, whether in terms of content or appearance, is considered credible and hence narrowing the information variety available to the individual. Online content creators can use the knowledge on these heuristics to make their message more credible, however, consumers should strive as well to become aware of their limitations and vulnerabilities in making wrong credibility judgements. Future research should explore in depth the ways in which these heuristics are used depending on the experience of the online user. Are some heuristics favored more by experienced Internet users, while less experienced Internet users favor other heuristics? Do the frequency and type of social media used influence individuals propensity to use only certain heuristics? These questions would be interesting to explore in order to understand better consumer vulnerabilities in information processing.

While the impact of social proof on consumer behavior may be observed, there are also more subtle influences illustrated by the research on the direct link between perception and behavior. According to their findings, consumers are very sensitive to environmental cues and they unconsciously adopt attitudes and behaviors induced by others. Two implications are derived from this: automatic processes are not solely the result of repeated actions (habits) and the characteristics of the choice context influences behavioral decisions.

Conscious and unconscious processes both play an important role in determining behavior and most often they support one another (Bargh, Schwader, Hailey, Dyer, & Boothby, 2012). Usually, unconscious processes determine social behavior and conscious processes alter

uncounscious impulses. Future research should try to include the study of unconscious processes in consumer behavior modeling and to find a way to account for the interplay between the conscious and unconscious thought processes. This development could be a real game changer in consumer behavior research, since the current methodologies based on self-reported answers to questionnaires will no longer be appropriate. Although, further debate and analysis is needed in order to implement new research methodologies, new ideas could come from various other fields like experimental psychology and machine-learning.

5. Conclusions

Despite an increased access to information, today's consumer is not necessarily moving towards an increased consumer rationality in decision-making, since the increasing volume of online information comes with costs of cognitive processing and credibility evaluation. Moreover, the social influence on individual choice is becoming increasingly visible, an aspect that was rather ignored in the ideal of rational consumer. The online environment highlights particular aspects of consumer behavior that were rather hidden and seemingly unimportant in the world unconnected by the Internet: the impact of social influence and the cost of information processing.

Today, in order to make good enough choices in a timely manner, consumers resort different shortcuts. Social proof is commonly used in decision-making and it mediates the credibility and authority given to the online source of information, directly influencing consumer trust and the subsequent behavior. This means that the information shared by many becomes true, trustworthy and acquires authority.

Moreover, there are also social and environmental cues that trigger behavior automatically, without any cognitive processing. These cues may be used in order to increase consumer impulsiveness and lead to immediate behavior performance. Their impact is usually located at an unconscious level and for this reason they cannot be accounted for in consumer behavior model that concentrate on conscious cognitive processes. Consumer behavior research procedures could be changed and new tools developed in order to understand all these changes observed in the online social interaction so that consumer knowledge advances with the technology available.

This paper aimed to review of the main influence mechanisms responsible for consumer decision-making with limited deliberation and to highlight their functioning in online contexts. The paper contributes to the literature on the changes in consumer behavior driven by online contexts and it highlights their implications for the ideal of consumer rationality. Another contribution is the discussion of social and environmental factors that increase consumer vulnerability and are worth considering for advancing consumer awareness and wellbeing. However, a major limitation for the paper is that it offers only an overall review of the multiple influences that diminish consumer deliberation in online settings. In order to improve our understanding and knowledge on the consumer online behavior three future research directions are proposed for further study: the impact of consumer experience with Internet on evaluating information credibility, the role played by consumer's self-concept on the effectiveness of social influence tactics and the importance of online cues in triggering automatic behaviors.

Another challenge for future research is also to find methodological solutions to reduce the use of the traditional way of testing consumer behavior patterns: through self-reported responses to questionnaires. In fact, there is a significant discrepancy between what consumers say they do and their actual behavior. This is a serious concern for testing models in online contexts since these questinnaires involve a lot of verbalization, while online interaction is based primarily on clicks, pictograms and multimedia content, none of which are spoken or

written by the user. In order to adavance consumer research in this area new tools need to be developed with inspiration from psychology anf machine-learning research.

References

1. Aarts, H., Paulussen, T., & Schaalma, H. (1997). Physical exercise habit: On the conceptualization and formation of habitual health behaviors. *Health Education Research: Theory and Practice, Vol. 12*, 363-374.
2. Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl, & J. Beckmann, *Action-control: From cognition to behavior* (pp. 11-39). Heidelberg: Springer.
3. Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour.* New Jersey: Englewood Cliffs, Prentice-Hall.
4. Bargh, J., Chen, M., & Burrows, L. (1996). The automaticity of social behavior: Direct effects of trait concept and stereotype activation on action. *Journal of Personality and Social Psychology, Vol. 71*, 230–244.
5. Bargh, J., Gollwitzer, P., Lee-Chai, A., Barndollar, K., & Trötschel, R. (2001). he automated will: Nonconscious activation and pursuit of behavioral goals. *Journal of Personality and Social Psychology, Vol. 81*, 1014–1027.
6. Bargh, J., Schwader, K., Hailey, S., Dyer, R., & Boothby, E. (2012). Automaticity in social-cognitive processes. *Trends in Cognitive Sciences, Vol. 16, No. 12*, 593-605.
7. Carver, C., Ganellen, R., Froming, W., & Chambers, W. (1983). Modeling: An analysis in terms of category accessibility. *Journal of Experimental Social Psychology, vol. 19*, 403-421.
8. Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39*, 752–766.
9. Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception-behavior link and social interaction. *Journal of Personality and Social Psychology, Vol. 76*, 893–910.
10. Chartrand, T. L., Maddux, W. W., & Lakin, J. L. (2005). Beyond the perception-behavior link: The ubiquitous utility and motivational moderators of nonconscious mimicry. In R. Hassin, J. S. Uleman, & J. Bargh, *The new unconscious* (pp. 334-361). New York: Oxford University Press.
11. Cialdini, R. (2001 b, October). Harnessing the Science of Persuasion. *Harvard Business Review*, pp. 72-79.
12. Cialdini, R. (2001). *Influence. Science and Practice. Fourth Edition.* Needham Heights: Allyn & Bacon.
13. Cialdini, R. (2003, Summer). The Power of Persuasion. *Stanford Social Innovation Review*, pp. 18-27.
14. Decety, J., & Grezes, J. (1999). Neural mechanisms subserving the perception of human actions. *Trends in Cognitive Sciences, Vol. 3*, 172–178.
15. Dennison, G., Bourdage-Braun, S., & Chetuparambil, M. (2009). *Social commerce defined. White paper #23747.* Research Triangle Park, NC, USA: IBM Corporation.
16. Dijksterhuis, A., & Bargh, J. (2001). The perception-behavior expressway: Automatic effects of social perception on social behavior. *Advances in Experimental Social Psychology*, 1-40.
17. Dijksterhuis, A., & Bargh, J. A. (2001). The perception-behavior expressway: The automatic effects of social perception on social behavior. In M. Zanna, *Advances in experimental social psychology, Vol. 33* (pp. 1-40). San Diego, CA: Academic.

18. Dijksterhuis, A., & van Knippenberg, A. (1996). The knife that cuts both ways: Facilitated and inhibited access to traits as a result of stereotype activation. *Journal of Experimental Social Psychology, Vol. 32*, 271–288.

19. Dijksterhuis, A., Smith, P., van Baaren, R., & Wigboldus, D. (2005). The Unconscious Consumer: Effects of Environment on Consumer Behavior. *Journal of Consumer Psychology, Vol. 15, Nr. 3*, 193–202.

20. Dittmar, H. (2008). Consuming passions? Psychological motives for buying consumer goods. In H. Dittmar, *Consumer Culture, Identity and Well-Being. The Search for the "Good Life" and the "Body Perfect"* (pp. 49-70). Psychology Press.

21. Dittmar, H., & Drury, J. (2000). Self-image - is it in the bag? A qualitative comparisonbetween ordinary and "excessive" consumers. *Journal of Economic Psychology*, 109-142.

22. Fazio, R. H. (1990). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. In M. P. Zanna, *Advances in experimental social psychology Vol. 23* (pp. 75-109). San Diego, CA: Academic.

23. Fazio, R., & Olson, M. (2014). The MODE model: Attitude-Behavior Processes as a Function of Motivation and Opportunity. In J. W. Sherman, B. Gawronski, & Y. Trope, *Dual process theories of the social mind* (pp. 155-171). New York: Guilford Press.

24. Ferrara, E., Varol, O., Davis, C., Menczer, F., & Flammini, A. (2016). The Rise of Social Bots. *Communications of the ACM, Vol. 59, Nr. 7*, 96-104.

25. Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior.* Reading, MA: Addison-Wesley.

26. Fitzsimons, G., & Bargh, J. (2003). Thinking of you: Pursuit of interpersonal goals associated with relational partners. *Journal of Personality and Social Psychology, Vol. 84*, 148–164.

27. Fogg, B. (2003). *Persuasive Technology: Using Computers to Change What We Think and Do.* Morgan Kaufmann.

28. Gallese, V., Fadiga, L., Fogassi, L., & Rizzolatti, G. (1996). Action recognition in the premotor cortex. *Brain, Vol 119*, 593–609.

29. Guadagno, R., & Cialdini, R. (2005). Online persuasion and compliance: social influence on the Internet and beyond. In Y. Amichai-Hamburger, *The Social Net: The social psychology of the Internet* (pp. 91-113). New York: Oxford University Press.

30. Guadagno, R., Muscanell, N., Rice, L., & Roberts, N. (2013). Social Influence Online: The Impact of Social Validation and Likability on Compliance. *Psychology of Popular Media Culture, Vol. 2, No. 1*, 51-60.

31. Hausman, A. (2000). Multi-Method Investigation of Consumer Motivations in Impulse Buying Behavior. *Journal of Consumer Marketing, Vol. 17, Nr. 5*, 403-426.

32. Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications*, 246-259.

33. Hwang, T., Pearce, I., & Nanis, M. (2012). Socialbots: Voices from the Fronts. *ACM Interactions 19, 2*, 38-45.

34. Iacoboni, M. (2005). Understanding others: Imitation, language, empathy. In S. Hurley, & N. Chater, *Perspectives on imitation: From mirror neurons to memes, Vol. 1* (pp. 77–100). Cambridge, MA: MIT Press.

35. *Internet Usage Statistics*. (2018, June). Retrieved from Internet World Stats: https://www.internetworldstats.com/stats.htm

36. Jackson, T. (2005). Motivating Sustainable Consumption. A review of evidence on Consumer Behavior and Behavioral Change. *Sustainable Development Research Network*.

37. James, W. (1890). *The principles of psychology.* New York: Holt.

38. Johnston, L. (2002). Behavioral mimicry and stigmatization. *Social Cognition, Vol 20*, 18–35.
39. Lancaster, K. (1966). A new approach to consumer theory. *Journal of Political Economy, 174*, 132-157.
40. Li, H., Kuo, C., & Russell, M. (1999). The Impact of Perceived Channel Utilities, Shopping Orientations, and Demographics on the Consumer's On-Line Buying Behavior. *Journal of Computer-Mediated Communication Vol. 5, No. 2*, http://www.ascusc.org/icmc/vol5/issue2/hairong.html.
41. Macrae, C., & Johnston, L. (1998). Help, I need somebody: Automatic action and inaction. *Social Cognition, Vol. 16*, 400-417.
42. Maslow, A. (1954). *Motivation and Personality.* Harper & Row Publishers, Inc.
43. Metzger, M., Flanagin, A., & Medders, R. (2010). Social and Heuristic Approaches to Credibility Evaluation Online. *Journal of Communication, Vol. 60*, 413-439.
44. Orji, R., Mandryk, R., & Vassileva, J. (2015). Gender, Age and Responsiveness to Cialdini's Persuasion Strategies. In T. MacTavish, & S. Basapur, *PERSUASIVE 2015* (pp. 147-159). Springer International Publishing Switzerland.
45. Ouellette, J., & Wood, W. (1998). Habit and Intention in Everyday Life: The Multiple Processes by Which Past Behavior Predicts Future Behavior. *Psychological Bulletin Vol. 124 Nr. 1*, 54-74.
46. Petty, R. E., Cacioppo, J. T., & Schumann, D. (1983). Central and peripheral routes to advertising effectiveness: The moderating role of involvement. *Journal of Consumer Research, 10*, 135–146.
47. Ratkiewicz, J., Conover, M., Meiss, M., Goncalves, B., Flammini, A., & Menczer, F. (2011). Detecting and Tracking Political Abuse in Social Media. *Proceedings of the Fifth Annual AAAI Conference on Weblogs and Social Media*, (pp. 297-304).
48. Samuelson, P. (1938). A note on the pure theory of consumer behaviour. *Economica, 5*, 61-71.
49. Scott, J. (2000). Rational Choice Theory. In G. Browning, A. Halcli, & F. Webster, *Understanding Contemporary Society: Theories of The Present* (pp. 126-138). Sage.
50. Shepperd, B., Hartwick, J., & Warshaw, P. (1988). The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. *Journal of Consumer Research, Vol. 15, No. 3*, 325-343.
51. Simon, H. (1957). *Models of Man.* New York: John Wiley.
52. Stoica, A.-A., Riederer, C., & Chaintreau, A. (2018). Algorithmic Glass Ceiling in Social Networks. The effects of social recommendations on network diversity. *WWW 2018: The 2018 Web Conference,.* New York, NY, USA: ACM.
53. Sundar, S. (2008). The MAIN model: A heuristic approach to understanding technology effects on credibility. In M. Metzger, & A. Flanagin, *Digital media, youth, and credibility* (pp. 73-100). Cambridge, MA: MIT Press.
54. Taraborelli, D. (2008). How the Web is changing the way we trust. In K. Waelbers, A. Briggle, & P. Brey, *Current issues in computing and philosophy.* Amsterdam: IOS Press.
55. van Baaren, R., Holland, R., Kawakami, K., & van Knippenberg, A. (2004). Mimicry and Prosocial Behavior. *Psychological Science, Vol. 15*, 71-74.
56. Wells, J., Parboteeah, V., & Valacich, J. (2011). Online Impulse Buying: Understanding the Interplay between Consumer Impulsiveness and Website Quality. *Journal of the Association for Information Systems Vol. 12 No 1*, 32-56.
57. Wigand, R., Benjamin, R., & Birkland, J. (2008). Web 2.0 and beyond: implications for electronic commerce. *Proceedings of the 10th International Conference on Electronic Commerce Innsbruck, Austria, August.* New York: ACMPress.