Understanding Our Behavior As We Age: Effects of Memory and Time Horizons on Beliefs, Preferences, and Choices

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Session name: Understanding Our Behavior as We Age: Effects of Memory and Time Horizons on Beliefs, Preferences, and Choices
First paper: Title: Educating Older Adults About the Flu Can Reduce Their Intentions to Get a Vaccination Authors: Ian Skurnik (University of Toronto), Carolyn Yoon (University of Michigan), and Nobert Schwarz (University of Michigan) Short abstract: Many health providers and government agencies publish information to help educate the public about health issues. Some of these publications explain “facts and myths” about a particular health concern, in an effort to clear up potential misconceptions about medical treatment. We found that older adults tended to misremember myths as facts soon after having read such publications, which, paradoxically, left them with lower intentions to get a flu vaccine than people who did not read any information about the flu. We recommend ways to warn people about false information so they are less likely to misremember it as true. Second paper: Title: Age Differences in Consumer Decision Making Authors: Sanjay Sood (UCLA), Loraine Lau-Gesk (University of California, Irvine), and Aimee Drolet (UCLA) Short abstract: Are older consumers wiser consumers? Two experiments show that some of the 'gestalt' features of event sequences identified by psychologists, such as peak-end preference, may have differing influence on the judgments of older and younger people. A third experiment demonstrates age-related differences in adherence to a rule that governs preferences for sequences of events. These results are discussed in light of much research showing that, as consumers age, their cognitive ability declines. However, the effects of this cognitive decline on decision-making vary considerably. Third paper: Title: Modeling Long-Term Determinants of Brand Choice by Older Consumers Authors: Raphaëlle Lambert-Pandraud (Négocia) and Gilles Laurent (HEC School of Management) Short abstract: Different theoretical perspectives (Nostalgia, Socioemotional Selectivity) both lead to predict a higher relative preference of older consumers for long-established brands. However, Nostalgia predicts an attachment to brands first encountered when the consumer was young, while, according to Socioemotional Selectivity, an attachment can be built at any age. We compare the predictions of these two perspectives against actual brand choices observed in a large sample (n=148,537) of female perfume users. The comparison is done first on the basis of qualitative characteristics predicted by simple analytical models; then, through the statistical test of a conditional logit model.

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SESSION OVERVIEW

One of the few inevitabilities in life is that we will all grow older. Because of rising standards of living and the size of the “Baby Boom” generation, by 2040 one in four Americans will be over age sixty-five. People over 65 are already the biggest consumers of medical products and services, and the US Census Bureau estimates that as the Baby Boomers advance through retirement, they will form the wealthiest cohort in US history. It is difficult to exaggerate the importance of understanding how older adults think and make judgments as consumers.

Perhaps the single most important fact about mental function and aging is that the performance of older adults varies widely across different situations and tasks. This complex variation in performance is not well understood, but investigating it is crucial to our comprehension of older consumers’ cognition and behavior. The purpose of this special session will be to advance our knowledge of older consumers beyond the simple demonstration of cognitive deficits, and show how the mental processes and perspectives that older adults employ lead them to make judgments and preferences that are systematically different from those of their younger counterparts. This purpose highlights the conference’s general theme, “transformative consumer research,” in its focus on improving outcomes for both consumers and managers. The session includes experimental research grounded in social cognition and cognitive psychology, and also formal empirical modeling of product choice. The session should interest a diverse range of ACR attendees.

The papers in this session focus on extending our knowledge of older and younger consumers’ cognition by examining both memory and time perspective differences, including: (1) some unexpected consequences of a standard memory deficit, (2) a demonstration of the role of age-dependent time horizons on preferences for sequences, and (3) an explanation of product choice and brand loyalty across the lifespan. In the first paper, Ian Skurnik, Carolyn Yoon, and Norbert Schwarz show some unexpected “downstream” consequences of informing consumers about health issues. Older consumers show an increased “illusion of truth effect” (relative to younger adults) because they have trouble remembering the context in which they acquired information, but can still recognize the information itself with high accuracy. In this experiment, older adults read a flyer from the Centers for Disease Control (CDC) that warns people about some “myths” about the flu vaccine. The flyer is published for public education as a free service of the CDC. Shortly after reading the flyer, older adults tended to misremember flu “myths” as flu “facts.” The undesired consequence of this memory bias is that older adults who read the CDC flyer ultimately reported reduced intentions to get the flu vaccine, and felt that the flu was less dangerous, compared to older adults who read an “all-fact” version of the flyer and a third group who read no information about the flu at all.

The second paper, by Sanjay Sood, Loraine Lau-Gesk, and Aimee Drolet, focuses on the consequences of older adults’ focus on the present moment, as opposed to younger adults’ concern with the future. In their first two experiments, they show that some of the ‘gestalt’ features of sequences identified by psychologists, such as giving extra weight to the sequence’s peak and end, may have differing influence on the judgments of older and younger people. Younger adults preferred to save the best for last when choosing a sequence of rides at Disneyland (Experiment 1) or ordering the courses of a meal (Experiment 2). In contrast, older adults consistently choose to experience the best elements of a sequence first. This age difference can be explained by socioemotional selectivity theory (Carstensen 1992), according to which older people have a more limited time horizon perspective. In other words, older people feel that their time is limited, and they choose not to postpone pleasurable or positive experiences. A third experiment expands on these results and finds that older adults are less apt to seek variety across sequential choices.

The third paper, by Raphaëlle Lambert-Pandraud and Gilles Laurent, examines perfume purchases across the lifespan. Using a large dataset of perfume purchasers in France, the authors consider the genesis of long-term brand loyalty and other patterns of preference. Perfume is a high-involvement product and is normally sold in circumstances of relatively constraint-free choice. The authors investigate two different explanations for perfume preference: (1) a nostalgia explanation, where consumers would form preferences at some critical period in life and maintain those preferences into the future, and (2) a socioemotional explanation in which a person’s relationship to a brand is built continuously over the lifespan. These explanations are formalized qualitatively through analytical models and compared to conditional logit model results to determine which explanation provides the ‘best’ fit. The results point to specific time periods in consumers’ lives reflecting the greatest sensitivity in terms of preference formation. The authors highlight the marketing implications of their findings.

EXTENDED ABSTRACTS

“Educating Older Adults About the Flu Can Reduce Their Intentions to Get a Vaccination”
Ian Skurnik, University of Toronto
Carolyn Yoon, University of Michigan
Norbert Schwarz, University of Michigan

The flu infects more than 300 million people each year, making it one of the world’s most widespread contagious diseases. In the United States alone between 20,000 and 36,000 annual deaths are attributed to influenza, with over 80% of those deaths occurring in the over-65 age category (MMWR 2003). Vaccination is the most effective measure to prevent infection and transmission of the flu. Although vaccination programs are effective enough to reduce flu incidence by 70%-90% in healthy adults (Bridges et al., 2000), the CDC reports that at least 60% of US residents do not get vaccinated.

An important cause of these low immunization rates is incorrect beliefs about the vaccine itself. Sources of misinformation range from anti-vaccination web sites to uninformed health care workers. The near-universal response from professional medical sources is a call for educational measures that correct misconceptions about the vaccine (e.g., Nicholson et al., 2003). Following these recommendations, the US Centers for Disease Control and
prevention (CDC) published a flier about flu vaccine. The flier describes “facts and myths” about the vaccine with a short paragraph of additional information about each fact and myth. This approach rests on the reasonable assumption that warning people about false information will keep them from thinking that it is true.

However, research on component processes of memory suggests that attempts to warn people about false information can backfire and unintentionally increase people’s belief. Specifically, sometimes people can remember the basic content of a message without remembering the details of its presentation (e.g., Jacoby, 1999). When faced with this sort of incomplete memory for information, people show a marked tendency to think of the information as true (e.g., Skurnik, Yoon, Park, & Schwarz, 2005). In other words, mentioning misinformation in order to discredit it risks enhancing its perceived truth. Moreover, this effect is stronger in older than in younger adults because of a particular pattern of memory decline with age. Relative to younger adults, older adults show a systematic decline in memory for contextual details, but intact feelings of familiarity for information they have seen before. Hence older adults are especially likely to remember false information without remembering that it has been discredited.

We had older and younger adults read the CDC “Flu Facts and Myths” flier, and then, either immediately or after an hour, we tested their memory for the flier’s information and asked about their personal beliefs and intentions toward the disease and the vaccine. For comparison, other participants read an altered version of the flier that included the same information but restated the “myths” in factual form, so that no false information was presented. A third group of participants answered the questions about flu knowledge and intentions to get the vaccine without having read any flier. The experiment hence had a 2(age) X 3(flyer version) between-subjects design.

Immediately after reading the CDC Facts & Myths flyer, participants showed no truth bias in their memory of the flyer claims. However, after an hour, older adults tended to misremember the flyer’s myths as facts. That is, they misidentified more than 20% of the myths as facts, but misidentified only 5% of the facts as myths. Younger adults showed a similar trend in their memory for the flyer’s claims after an hour, but it was much less pronounced than that of the older adults.

Memory for the false claims also had implications for participants’ intentions to get flu vaccines in the upcoming flu season. Since the flu “myths” generally allege some drawback of the vaccine, belief in them should make getting a vaccine less attractive (an example is “The side effects of the vaccine are worse than the flu”). Immediately after reading either version of the flyer, people reported increased intentions to get a flu vaccine for the upcoming flu season, compared to people who didn’t read any flyer. For people who read the Facts-Only flyer, intentions were still increased after an hour. However, after an hour people who read the Facts and Myths flyer had reduced intentions to get a vaccine, and did not differ from people who had not read a flyer at all. In addition, after half an hour, people who read the Facts and Myths flyer reported the lowest perceived personal risk for catching the flu than any other group in the study, including those who read no flyer at all.

Extensions of this study are under way using information about Alzheimer’s disease and healthy diet. To summarize our findings, damaging misinformation was inadvertently supplied/reinforced by the very attempt to refute it. After a delay, the CDC flyer left older adults less likely to get a vaccine than anyone else—they were worse off than if they had not read anything about the flu. Results for the Facts-Only flyer show that emphasizing what’s true, rather than what’s false, has a much better chance of enhancing people’s correct knowledge about flu vaccine.

“Age Differences in Consumer Decision Making”
Sanjay Sood, UCLA
Lorraine Lau-Gesk, UC Irvine
Aimee Drolet, UCLA

Are older consumers wiser consumers? Do consumers make better decisions as they age? Much research shows that the judgments and decisions of older consumers differ from those of younger adults. Some of these differences can be attributed to declining cognitive abilities (e.g., Hasher and Zacks 1992; John and Cole 1986), which can lead to either diminished or enhanced performance relative to younger adults (Drolet & Luce, 2003). Other age differences may be driven by older adults’ more limited time horizon perspective: younger adults tend to be more focused on the future, while older adults tend to be more present focused (Carstensen, 1992).

Taken together, the above research strongly indicates that the underlying decision processes of older adults can differ significantly from those of younger adults. Our research investigates the impact of aging on decision-making. In particular, we focus on the impact of age on consumers’ preferences for sequences of hedonic events.

Research on how people make retrospective judgments suggests that people tend to neglect the duration of an overall experience (e.g., Redelmeir and Kahneman 1996). Instead, they follow a “peak and end” rule (Fredrickson and Kahneman 1993). In making retrospective judgments, people tend to overweight the most intense hedonic moment (the “peak”) and the last hedonic moment (the “end”). Accordingly, people generally prefer sequences of events with improving trends. Put differently, people like to “save the best for last.”

Accordingly, we could expect differences in older versus younger consumers’ preferences. On one hand, older consumers may lack the mental resources needed to depart from habitual ways of making judgments, and may weight the peak and end of experiences more than, or more consistently than, younger adults do. If so, then older adults would more strongly prefer sequences with improving trends compared to younger consumers. On the other hand, older consumers may evaluate sequences of hedonic events differently because of their limited time horizon perspective. According to socioemotional selectivity theory (Carstensen, 1992), older people have a more limited time horizon perspective; put informally, older people recognize that their time in this world is limited. Consequently, they are more present-focused, living more for the moment compared to younger individuals, who are more focused on the future. Older consumers might prefer not to wait and have the most preferred experience first.

We conducted three experiments. In experiment 1 (n=200), young (18-25) and older (65 plus) adult participants were asked to imagine they were visiting Disneyland and only had time left for three rides. They were told that the three available rides varied in terms of how much participants could expect to enjoy them: 1) It’s a Small World (“least enjoyable”); 2) Haunted Mansion (“most enjoyable”); and 3) Trolley Ride (“somewhere in the middle”). Participants were asked to order the rides so they maximized their overall pleasure. Experiment 1 finds preferences for improving sequences among younger but not older consumers. Specifically, 58% of younger consumers prefer to experience the most enjoyable ride last compared to 36% for older consumers.

Experiment 2 uses a different context to test for age-related differences in preferences for sequences. Experiment 1 used an...
actual environment (Disneyland). The amount of familiarity with Disneyland may have differed among older versus younger participants. In experiment 2, older and younger participants (n=193) were asked to imagine they were eating at a tapas restaurant (a restaurant that serves small appetizer-like dishes). They were told they will have three dishes: an “excellent dish”, “so-so dish”, and a “not very good dish.” As in experiment 1, results shows that younger consumers are more likely to order the best option last. In addition, experiment 2 finds an effect of temporal proximity. Older consumers strongly prefer having the neutral option (“so-so dish”) come between the positive and negative options (92% vs. 75%). The older consumers prefer that the positive and negative affective events happen farther apart in time.

Results of experiments 1 and 2 imply that some of the ‘gestalt’ features of sequences identified by psychologists may have differing influence on the judgments of older people. Experiment 3 tests whether there are age-related differences in adherence to another rule that governs preferences for sequences of events. Past research shows that consumers seek variety in how they make sequential choices (Drolet 2002). Having relied on a particular heuristic to make a choice (e.g., “Buy brand name”), consumers tend to rely on that particular heuristic less in later choice. Experiment 3 tests for differences in inherent rule variability due to age.

In experiment 3, older and younger participants (n=400) were randomly assigned to one of four groups. Two groups were asked to make a choice in a background set that favored choice of the lower price option, either fax machine (Hewlett Packard $249 or Lexmark $149) or pine cleaner (Pine Sol $4.59 or private label $3.69). Two other groups were asked to make a choice in a background set that favored choice of the higher quality option, either TV (Sony $389 or Sharp $299) or cereal (Kellogg’s $5.49 or private label $3.89). All four groups made their second choice in the same (target) set, Mexican restaurant (4 stars $27 or 2.5 stars $16). Results show that younger consumers were more likely to vary rule use across choices. In the lower price sets, there were no differences in choice of the lower price option by age group (young=75%; old=78%). However, in the second set, younger consumers were much more likely to choose the expensive Mexican restaurant (young=65%; old=39%). In the higher quality sets, there was no significant difference in choice of the higher price option by age group (young=42%; old=36%). Again, younger consumers showed a greater tendency to vary rule use across the sequence of choices. They preferred the cheaper restaurant more (57%) compared to the older consumers (46%).

“Modeling Long-Term Determinants of Brand Choice by Older Consumers”
Raphaëlle Lambert-Pandraud, Négocia
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Previous studies have shown that older consumers tend to prefer long-known items: older movie stars, older car styles, older music forms, and also long-established brands. Several theoretical perspectives have been proposed to explain this phenomenon, such as nostalgia, socioemotional selectivity, and declining innovativeness of older consumers. While these perspectives all predict that older persons should have a higher probability of choosing long-known items, they predict different patterns of preference change across ages. For example, a nostalgia explanation would argue that preferences are acquired during a sensitive period (late adolescence, early adulthood) and remain present in later life. In contrast, socioemotional selectivity theory suggests that the affective relationship of a person to a product or brand is built continuously over all the years of that person’s life, rather than only on the basis of an early sensitive period. In this research, we test these theoretical perspectives by comparing their predictions to actual patterns of preferences by consumers of different ages for products introduced at different dates.

Our empirical application concerns perfume choice for several reasons. First, perfume is a high involvement product. Second, it is a product for which each store typically carries a very complete selection, thus allowing consumers a constraint-free choice (in contrast to a product like cars, for which each dealer typically carries only a few brands, often a single one). Further, it is one of the very few categories in which products remain in their exact initial form as long as they are sold: same name, same formula, same bottle (in contrast to cars, for which brand names remain, but models change regularly). Some of today’s successful perfumes were introduced, in the same form, more than eighty years ago. Our empirical work is based on a large mail survey, performed in 2002 in France, describing the perfume choices of 148,537 female users of perfume, aged 19 to 103.

Comparative analysis of the theoretical perspectives comprised two steps: qualitative and quantitative. In the qualitative step, we built simple analytical models of consumer preference based on each theoretical perspective. For example, the analytical model based on the nostalgia explanation assumes that the attractiveness of a perfume, for a person of a given age, depends on whether the perfume appeared when the person was in the sensitive period described above. Thus, attractiveness would be at a maximum if the perfume appeared when the consumer was between 15 and 25, and at a minimum if not (with some smooth transition between the two levels). In contrast, the analytical model based on the socioemotional selectivity perspective assumes that the attractiveness of a perfume, for a person of a given age, depends on the number of years during which the person has known the perfume (i.e., number of years during which the perfume was available in the market since the person turned 15). Thus, a perfume introduced 60 years ago has been known for 60 years by a 80-year old consumer, but for only 0 years by a 25-year old consumer, and its attractiveness is assumed to be six times higher for the first person. In contrast, a perfume introduced 10 years ago should have the same attractiveness for both consumers, since both have known it for 10 years. In our analytical models, the predicted share of choices, for a given perfume, or for a group of perfumes, is simply equal to its attractiveness, divided by the summed attractiveness of all the competing perfumes. Following the tradition of analytical models, we perform our tests on a simplified, aggregate data set, in which perfumes are clustered according to their launch date: before 1962, 1962 to 1991, and after 1991. We analyze how the relative shares of these three groups change as a function of consumer age, for each of the analytical models. We then compare the qualitative patterns of these changes to those observed in empirical data. For example, are there smooth changes in perfume choices over age, or are the changes occurring mostly on certain age periods? In the latter case, what are the key ages? What are the orders of magnitude of the predicted changes? What are the predicted shares for typical groups of consumers defined by their age—e.g., 80 or 25 years? On the basis of these qualitative pattern comparisons, we assess the different theoretical approaches by testing whether the analytical model based on nostalgia fits better than the one based on a socioemotional selectivity explanation.

The quantitative step of the assessment uses a conditional logit model. In this statistical model, the choice probability of a given perfume (or group of perfumes) is computed in the same manner as in the qualitative approach—its attractiveness divided by the summed attractiveness of the competitors. The differences com-
pared to the previous step are that we use a more detailed data set (perfumes are aggregated in more groups, each group being defined by a narrower set of introduction dates), and that we rely on formal maximum likelihood tests to compare the predictive power of the different theoretical approaches. Also, we analyze the results of combining several theoretical approaches in the same statistical estimation: Is it worthwhile to include both a socioemotional selectivity component and a nostalgia component in the same model?

The implications of our results are important from a theoretical point of view. The large scale of our dataset, and the specific characteristics of the perfume market described above, allow us to make differentiated predictions for the different theoretical approaches, and to assess their relative predictive power. Managerial implications are equally important, as we assess whether the preference for a perfume is mostly acquired during an early sensitive period, or whether this preferences is accumulated over all the years of a consumer’s lifetime, and therefore can be acquired or reinforced subsequent to one’s sensitive period.