Special Session Summary  How Well Do We Know Each Other? Theory and Method in Dyadic Prediction

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How Well Do We Know Each Other? Theory and Method in Dyadic Prediction

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SESSION OVERVIEW
How accurately can we predict or estimate the preferences and behaviors of other people whom we know well? This question has substantive as well as theoretical implications for consumer behavior. Its substantive importance is very apparent in many everyday contexts—giving gifts, buying products and brands that will be consumed by several members of a household, and providing proxy reports in consumer surveys, to name a few. From a theoretical standpoint, it raises many intriguing issues; for example, what cognitive strategies might people use to predict or recall the preferences and behaviors of others? And might the manner in which predictions are elicited, in of itself, impact on the precision of the answers? Further, what explains the fact that people occasionally assume that the preferences of close others (e.g., immediate family members or good friends) are overly similar to their own, while in other situations they err on the side of excessive dissimilarity? Are there motivational factors at work that might bias judgments? How can we best exploit the insights available from dyadic data?

Prior consumer research exists in this area but has been sporadic (see, e.g., Davis, Hoch and Ragsdale 1986; Hoch 1987). But of late the research has been invigorated by a conjunction of factors including advances in social cognition and judgment theory as well as a renewal of interest in family socialization and intergenerational influences on consumer preferences. This session brings together three sets of researchers who have investigated the topic of predicting others’ preferences and behaviors with dyadic data. Bickart, Phillips, and Menon examine the predictive accuracy of proxy reports of behavioral frequencies. They theorize how memory processes and judgment strategies should affect accuracy and report data from a survey of 40 dyads of student roommates. They find the regularity of the behavior only affects predictive accuracy when respondents are encouraged to use implicit theories (versus episodic memory) when making predictions. In addition, the closeness of the relationship only aided predictive accuracy when use of these implicit theories was cued. Their study offers methodological guidance to survey designers interested in predictive, dyadic data.

Willkie and Moore study similarity and predictive accuracy in usage behaviors and brand preferences in packaged goods categories. Their data are based on 102 mother-daughter dyads. Within a theoretical framework of intergenerational influences they examine predictive accuracy through the lens of family relationships, and awareness of family members’ actions. Their work identifies a set of methodological issues that offer challenges to researchers in intergenerational consumer behavior, discuss some conceptual approaches to handling them, and illustrates some interesting findings that can be uncovered with their methodology. Finally, Cotte, Chowdhury, Kenny, and Ratneshwar present a new methodology for assessing predictive accuracy in dyads. Their data come from a survey of 39 dyads of siblings in the domain of leisure goals and activities. They suggest how family socialization influences, as well as self-identity factors, are likely to influence actual (vs. assumed) similarity in preferences between siblings and thereby affect accuracy in prediction. The intriguing methodological approach they present is based on a new form of idiographic (within dyad) and nomothetic (across dyads) analysis that is invaluable in assessing predictive accuracy as well as actual and assumed similarity.

The proposed session should quite attractive to at least three groups of ACR researchers: (1) researchers interested in cutting-edge methodologies for dyadic analysis, (2) those who study consumer judgment and decision-making processes, and (3) people who are interested in family socialization processes and influences in consumer behavior. We anticipate a very fruitful interchange of ideas among the various authors who will be presenting the three papers and with the audience members as well.

EXTENDED ABSTRACTS

“Predicting Others’ Behavioral Frequencies: The Role of Judgment Strategy, Knowledge, And Regularity”
Barbara Bickart, Rutgers University—Camden
Joan M. Phillips, University of Notre Dame
Geeta Menon, New York University

Consumers make judgments about other peoples’ behavioral frequencies, both explicitly during surveys and implicitly (e.g., when making household purchase decisions). In this paper we examine how the memory structure accessed to construct a judgment about another person’s behavior affects the accuracy of such judgments. Specifically, we are interested in the extent to which accuracy varies depending on whether judgments are based on implicit theories about the other person, versus whether judgments are constructed based on recall of specific episodes of the behavior. We posit that the accuracy of implicit theories versus specific episodes will vary depending on the characteristics of the target behavior as well as the closeness of the dyad’s relationship. Specifically, we predict that the use of implicit theories will be most accurate when (a) the target behavior is regular and (b) when the dyad members are “closer”—that is, when they have the opportunity to construct accurate implicit theories about their partner’s behavior.

To test these hypotheses, we conducted an experiment with 40 pairs of roommates at two universities. For seven days, participants maintained individual daily diaries in which they recorded the frequency with which they engaged in ten behaviors each day. In addition, they noted whether or not their roommate was present each time they engaged in the behavior. Thus, we had a measure of the extent to which the roommate observed the specific episode of the behavior.

Then, both members of the dyad completed a follow-up survey in which they were asked to report on their roommate’s behavior during the previous seven days, as well as their own behavior. In this follow-up questionnaire, we manipulated the memory structure most accessible to participants by varying the wording of the behavioral recall question. Each dyad was randomly assigned to one of two versions of the follow-up questionnaire. In the “count” version, the respondents were asked, “How many times in the past seven days has your roommate (BEHAVIOR)” for each of the ten behaviors. They were then asked the same set of questions regarding their own behavior. In this condition, we were attempting to increase the accessibility of episodic memory. In the “estimate” version, the respondents were asked, “On average, in a typical seven-day period, how many times does your roommate (BEHAV-
IOR) for each of the ten behaviors, followed by the same set of questions about their own behavior. In this condition, we were attempting to increase the accessibility of implicit memory structures. We also measured the regularity of the behavior, and the closeness of the relationship using Berscheid, Snyder, & Omoto’s (1989) Relationship Closeness Inventory.

The findings are consistent with our predictions. First, we found that wording of the behavioral frequency question moderates the effect of regularity on the accuracy of frequency reports of behaviors such that regularity only affects reporting accuracy when respondents are asked to estimate (i.e., the use of implicit theories is encouraged). These results are consistent with Menon (1993, 1997), but while her work only examined self-reports, our investigation extends these results to the realm of reports about others.

Further, we show that the wording of the behavioral frequency question also moderates the effects of the closeness of a relationship on the accuracy of reports about others. Respondents in a close relationship with their partner provided more accurate reports of their partners’ behavior, but only when the use of implicit theories was cued. Closeness of the relationship had no effect on reporting accuracy when the use of episodic memory was encouraged. This finding is consistent with the idea that over a period of time, people acquire general knowledge about other peoples’ behavior (i.e., implicit theories) and then use these theories to predict their partner’s behavioral frequencies with some accuracy. Interestingly, we did not find any significant effects of actual observation of the behavior on reporting accuracy. This finding is consistent with Colvin et al.’s (1997) conclusion that relationship closeness rather than simple observation may be most crucial in determining empathic accuracy.

We discuss the theoretical implications of the findings for understanding how memory structures about others affect prediction judgment processes, as well as the practical implications for designing consumer surveys and directions for future research.

“Some Methodological Advances in Intergenerational Consumer Research on the Family”
William L. Wilkie, University of Notre Dame
Elizabeth S. Moore, University of Notre Dame

The topic of family influences in consumer behavior remains a formidable research area today. Children live with their families for many years. An enormous amount of consumer learning and personal formation occurs during this time. Intergenerational research in consumer behavior asks “To what extent are beliefs and preferences formed during these early years carried forward into adulthood?” The methodological issues involved in capturing this extensive and complex set of family influence processes are challenging.

The present paper arose while conducting an extended analysis of the role of intergenerational influences (IG) as a source of brand equity. As we suspected from prior literature, and as found in that resultant paper (Moore, Wilkie and Lutz 2002) as well, intergenerational influences appear to be a pervasive influence in the marketplace. For some product categories, IG helps to determine primary demand: that is, the segments of users and nonusers among young adults. We also found that IG is a significant source of brand equity for some leading brands, but, interestingly, not for some of their leading competitors. We concluded (as have prior researchers on this topic) that this IG phenomenon deserves more attention from the consumer research community than it has received to date.

The root concepts and analyses relevant to IG influences reflect intrafamily similarity, and can involve dyadic (or more) measures reflecting the different family members being studied. Thus the “capacity to predict” issue here involves uncovering underlying relationships amongst family members, including both knowledge and others’ actions. The challenge is to accurately capture learning that has occurred over a long period of time, and then assess its current impacts. One of the most difficult aspects of this challenge is dealing with the fact that much of IG influence has long been internalized as a child reaches adulthood—how are these particular influences to be isolated? In conducting our own IG analyses we encountered a number of interesting and somewhat complex methodological issues that are also likely to arise for other researchers undertaking work in this area in the future. In this paper, we raise some of these issues for more detailed consideration, together with data results as illustrations.

The data here is based on parallel surveys of 102 mothers and their young adult daughters, across 24 packaged good categories. Each of 102 family pairs thus constitutes a dyad for analysis purposes. Our underlying Hierarchy of Effects-type model suggests that intra-familial influence ties should reveal themselves at several levels of measurement and in a serial progression: (1) shared bases for even entering particular product categories (use/non-use), (2) with the daughter’s knowledge of her mother’s preferences, (3) as a possible logical precursor to including these in her personal consideration class for purchasing, with this (4) leading to a possible shared brand preference over time. Measures were then taken across these four levels for each of the 24 packaged goods categories. Separate measures were collected from the mother and daughter in each family, with no communication between them.

As we discuss in the current paper, we discovered that our dyadic analytic approach needed to be designed to successively uncover multiple levels of effects. Because our conception of IG influences is that they (a) exist in many forms, and (b) are internalized so as to be embedded within children’s self-identities, an inferential analytic approach was required to adequately detect and assess their presence. Thus, we developed a process in which successive “layers” of potential IG impacts would be “peeled back” or examined in turn. In a sense, this analysis allows us to systematically move deeper into the phenomenon in a search for embedded effects that might have been partially or totally masked by other factors. Chance levels of agreement also have to be considered and statistically eliminated. That is, the simple magnitudes of association and prediction do not necessarily reflect true IG influence—a lower number for one product category might actually represent a stronger IG effect than a higher number in another category. The paper discusses the difficulties posed by such marketplace factors as the presence of “icon” brands (there does not appear to be a straightforward means of solving this issue), product use/non-use, and differing numbers of competing brands, and suggests means for addressing these in future studies.

In delving into the details of the analytical thinking, we also present in this paper previously unreported findings that reveal some very intriguing conditional IG relationships. For example, we discuss how our IG analysis approach includes an assessment of “cohort effects” (shared preferences and behaviors within given age groups, that differ between age groups), and how these effects are expected to undercut IG influences themselves, primarily by operating on the daughters to break down previous affinities from the earlier years in the family homestead. By looking across “layers” of impacts in our analysis, we are able to see that cohort forces are in fact at work, and that they do interact with IG forces in some very interesting ways. For example, differences across cohorts in the use/non-use of certain categories appeared, as did cohort differences in some brands preferred (reflecting that some
brands are appealing more to the mother’s generation, some more to the daughter’s).

This cohort approach allowed us to identify a new layer of IG influence, which we term the “IG Brand Defender Effect.” This is an IG indicator that does not exist across the general market, but will only be uncovered in selected segments for selected brands. Specifically, in our data some older brands still popular with the mothers had registered significant declines in support among the younger daughter cohort. Now, this itself is likely to be evidence of a breakdown in IG influence in the face of the forces for change in this dynamic marketplace (consumer packaged goods). However, our “layered analysis” approach further suggested that it was still reasonable to search for IG influence within this conditioned result. In this paper we report how we conducted this further search, and how we did find this effect. In brief, for a number of those brands that are “out of favor” with the younger generation, we discovered a small but loyal group of IG daughters who are providing the little support that brand has remaining in this generation. In other words, these brands would be significantly worse off without this group of loyal IG “brand defenders.”

“Similarity, Predictive Accuracy and Assumed Similarity Among Dyads: Substantive and Methodological Issues”

Jane Cotte, University of Western Ontario
Tilottama G. Chowdhury, University of Connecticut
David A. Kenny, University of Connecticut
S. Ratneshwar, University of Missouri-Columbia

Advances in methodology in the areas of social cognition and judgment theory provide opportunities for consumer researchers interested in prediction to extend the way in which they consider predictive, dyadic data. Two major streams of research have been the work of Kenny and his colleagues (Kenny 1994; Kenny and Accitelli 2001; Kenny and Albright 1987; Kenny and Winquist 2001), who have focused on assumed similarity and predictive accuracy. In contrast, Hoch’s work (e.g. Davis, Hoch and Ragsdale 1986; Hoch 1987) has focused on various forms of accuracy and measurement of the biases in, and the processes of, people’s predictions of others. Both of these literatures, in psychology and consumer research, respectively, have studied reasonably similar dyad members (husbands and wives being a common dyad). However, neither of these two streams have addressed changes in predictive accuracy and assumed similarity when there are theoretical reasons that the members of the dyad may be motivated to be seen, and to consider themselves, as very different.

One dyad type where one might expect there to be both similarities and differences is a sibling pair. A family exerts a complex influence on the behaviors of its members. For example, in her prior research, Cotte found that innovative behavior is influenced both intergenerationally and intragenerationally (Cotte and Wood 2004). The nature of sibling influence, however, is a matter of some debate. Siblings can be important role models for each other and in many cases could act as a relevant peer group for comparison and modeling (Pechmann and Knight 2002). However, research over the last two decades has also documented that siblings are surprisingly different from one another (Dunn and Plomin 1990; Hoffman 1991; Plomin and Daniels 1987; Schacter et al. 1976).

One domain where one might expect to see sibling similarities is leisure choice. The family socialization and modeling process will likely teach children about the desirability of select leisure goals (Moschis 1987). For example, in families where a dominant theme is careful risk aversion, children are perhaps socialized to avoid thrill-seeking goals for themselves. Conversely, in families that encourage goals like “reaching for the stars”, the children may grow up to internalize these goals, translating them into action in leisure by engaging in activities designing to meet this motivational goal, for example, competitive athletics. Thus, the family socialization literature suggests that we should find considerable similarity between siblings in leisure goals and activities. In addition, Kenny (1996) points out three additional reasons for sibling similarity. Their unique similarity could be due to mutual influence (they discuss leisure together), information overlap (when siblings participate in leisure together) and finally, siblings may interpret the meaning of leisure in a similar way.

Notwithstanding, a person’s goals for leisure should also be derived from, and related to, that individual’s overall goal structure or self-identity (Huffman et al. 2000). Indeed, the domain of leisure should be highly salient to the overall self-identity, since leisure choices allow one to “play” and try out new possible selves (Markus and Ruvolo 1989; Shamir 1992; Stryker 1987). Therefore, in addition to the family socialization influence, leisure goals should reflect an individual’s own self-identity. And to the extent that siblings’ self-identities are independent of each other and the family influence factor, the similarity in their leisure goals should be reduced.

To examine these issues, we recruited 39 undergraduate students and their adult siblings. At the beginning of the behavioral lab session, subjects were asked to name all siblings. A randomization scheme using the first letter of each sibling’s name determined which sibling participated as the other half of the dyad. These subjects were mailed the same questionnaire (with appropriate changes and a cover letter, plus a pre-paid phone card as an incentive). The questionnaire asked self preferences for leisure activities and leisure goals, then for predictions about the sibling on the same set of preferences for leisure activities and leisure goals. The design was counter-balanced: one half answered goals first, then activities, and the other half answered activities first, then goals. Also, one half made ratings of self first, then predicted the sibling. The other half rated the sibling first, then rated themselves.

Following Kenny and Winquist (2001), we analyze the dyadic data in two separate but complementary ways (nomothetic and idiographic analyses). Indeed, one main contributions of this paper is building on this work and applying it in the consumer behavior domain. The nomothetic analysis captures the correlational structure of dyadic ratings for individual items or measures (e.g., specific leisure activities or leisure goals). The objective of the nomothetic analysis is to estimate the overall correlation between the ratings of the members of the dyads, when pooled over the total set of items or measures. This correlation is estimated via a structural model, more specifically, by estimating a measurement model using the unrestricted least squares method in LISREL. Our presentation will walk participants through the new procedure to estimate these dyadic models for predictive accuracy, actual similarity and assumed similarity. This involves corrections for differential elevation effects, and a large number of models. Ultimately, the LISREL output provides a correlation matrix with a single value, i.e., the pooled correlation, for the dyadic ratings for (as an example) the 28 leisure activities in our study.

Our results show that for these siblings assumed similarity is higher than actual similarity; this confirms a false consensus bias, and argues against an anchor and adjustment process. There is also a difference based on level of specificity. For activities, the siblings are more similar actually, and this is observable, so they are more accurate. For goals, the false consensus explanation for predictive inaccuracy is valid—inaccuracy results from assumed similarity when they are not similar. Finally, siblings are more similar on activities compared to goals, and they are less accurate when
predicting goals—likely because of the combination of false consensus and lack of actual similarity for goals. The level of specificity is thus a likely contributor to the mixed results for predictive accuracy found in the prior literature.

In summary, our research provides some explanations for the prior conflicting findings in the literature. We have some new insights, based in theory and data, for why inaccuracy may occur and how we can measure it. We are one of the first groups of consumer researchers making a concerted attempt to put some structure into the analysis of dyadic, predictive data. Thus, we build on Kenny and Winquist’s (2001) theory development to show how this method actually works. This method can be used in any dyadic setting, to show to what extent a prediction is based on the “truth” and/or by assumed similarity. Finally, we show that differing motivations for wanting to appear alike or different can influence predictive accuracy.