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WHY IT IS SO HARD TO PREDICT OUR PARTNER'S PRODUCT PREFERENCES

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ABSTRACT

Many consumer choices require predictions of partner's product attitudes. It has been shown that for some product categories, people might lack relevant partner knowledge. We investigate the cognitive processes underlying consumers' prediction of their partner's product attitudes when relevant partner information is available. In the present studies the relevant partner information is provided in the form of online feedback. A first study reveals that mere awareness one is predicting the partner's attitudes actually hurts accuracy when similarity is low. In follow-up studies we examine the underlying reasons and generalizability of the obtained results.

A couple leaves the furniture store quarreling because she hates the black leather upholstery that he wants for the recliner seat they had agreed to buy. A man buys his Florida football fan boyfriend white Gator socks that he will never wear. A girl gets an expensive Gwen Stefani haircut because her fiancé loves No Doubt, only to find out that he likes the music but not the looks of the singer. Smoothly occurring joint decisions by partners, gift buying, or even accountable personal decisions by relationship partners typically require that each understands the relevant preferences of the significant other.

Over the last few decades, research studying the purchase of products for joint use (e.g. Davis 1976) observed a shift to more egalitarianism between partners and more influence of the wife's attitudes for previously husband dominated purchases. In addition, scarcity of time has led to increasing delegation of purchase decisions to one of the partners (e.g. Belch and Willis 2001; Cunningham and Green 1974; Qualls 1982; Scazoni 1977). The importance of accurate prediction of partners' product preferences has increased correspondingly. Since close relationships provide many opportunities to gather information on the partner's product attitudes and how they differ from the own attitudes, one might expect that partners should be able to accurately predict each other's product preferences. However, one only needs to complete a 'Know your partner' test in a popular magazine to learn that it is not always so easy.

Sometimes spouses assume similar product attitudes when in fact they disagree. In this case, attitude discussion before the buying decision is unlikely and this can lead either to unpleasant surprises at the time of purchase, or silent compliance and conflict avoidance by one of the partners. At other times partners may assume that their product attitudes differ when they actually do not. This misperception very likely leads to miscommunication, and again, may result in dissatisfaction of at least one partner (Kenny and Acitelli 1989). In this article we look at the sources of accuracy and inaccuracy of this prediction process.

PREDICTION PROCESS

When consumers already have pre-stored knowledge of the partner's attitude towards a product, they simply have to retrieve that knowledge from memory (Hoch 1984). In many other situations however, the partners lack pre-stored knowledge of each other's product attitude. Hence, they will have to predict the other's attitude on the basis of other available cues. A commonly used cue is one's own attitude towards the product. Ross, Green and Haus (1977) found that people tend to project their own beliefs, attributes, and behaviors on others. A wife, who would like to possess a PDA or handheld PC, might buy one for her spouse assuming her husband holds a similar attitude. Many times replicated, this phenomenon is known as the 'false consensus effect' (see Marks and Miller 1987, for a review).

However, consumers have additional sources of information for inferring the partner's product preferences. First, they may rely on base rate and stereotypical information about the partner, like the gender, age and professional categories the partner belongs to. Since her husband belongs to the category of busy business people, where handheld computers symbolize professionalism, the wife might infer a PDA to be a suitable birthday present. Second, people also possess partner-specific knowledge, which may consist of general information about the partner (such as personality traits), attitudes towards similar products, feedback received during prior product discussions, or observations of the partner's purchasing behavior. The spouse might infer her partners preference for a PDA because she knows him as a very organized person, or because she knows his liking for electronic equipment like laptops and cellular phones. When predicting their partner's attitudes, then, people can both use their own attitudes and whatever information they have beyond their own attitudes (Davis, Hoch and Ragsdale 1986), as presented in the figure below. The prediction model in figure 1 is consistent with Kenny and Acitelli (2001), who decompose the overall obtained prediction accuracy into a direct effect due to the use of other information and an indirect effect due to projection.

Insert figure 1 about here

We are aware of only one prior study directly examining how accurate consumers are in predicting the partner's product preferences (Davis et al. 1986), which produced rather disappointing results: only 53 percent of the respondents were able to outperform a hypothetical forecaster who simply predicted the average gender-specific preference for each product. This finding comports with related research in social psychology on the accuracy of inferences about partner beliefs and personality traits, also suggesting that general accuracy is quite low. Swann and Gill (1997), for instance, found in both a cross-sectional and a longitudinal study that neither relationship length nor relationship involvement increases the accuracy in predicting partner's preferences. Also Kenny (1994, 2002) concludes that at best prediction accuracy increases early in the relationship but improves little after, if at all.

What is behind these low levels of accuracy? Low prediction accuracy may be due to inaccurate information cues or incorrect weighing of the cues (Hoch 1988). Applied to the two prediction cues people use when predicting the spouse's attitudes, three major sources of inaccuracy can be identified. First, there may be *errors of projection* if people can not reliably retrieve their own attitudes that serve as anchors, like when attitude similarity among the alternatives is high, or when personal attitudes are strongly influenced by the context in which they are retrieved (Davis et al. 1986).

Second, people may hold *invalid information about the partner*. They can receive false feedback due to "white" lies or when they are withheld negative feedback in order to avoid conflict (Davis et al. 1986). False feedback may result in the formation of incorrect prediction rules about the other's preferences, and inaccurate future predictions. People also tend to underestimate situational factors that have influenced observed behavior by the partner (Dunning et al. 1990) and, as a consequence, the inferred partner attitudes may be invalid for prediction in other situations. Attitudes can also change over time. Once couples feel that they know particular product preferences of each other, they may stop paying much attention to them, and consequently fail to update currently held beliefs when the partner's

attitudes change (Kenny and Acitelly 2001). And finally, even if most of the huge amount of information partners have about each other would be correct, it will also be irrelevant to any specific prediction task at hand, and might cloud the identification of relevant information. Inability to distinguish diagnostic from non-diagnostic information may put an extra burden on prediction accuracy.

Finally, most research on prediction errors has however focused on the *weight* people give to each type of prediction cue. One view is that people should not put any weight on their own attitudes. Many false consensus researchers have explained prediction inaccuracy by the inability to disregard own attitudes when predicting those of someone else. Others have noted that attitude projection can lead to accuracy because for many attitudes partners are actually quite similar to each other (Hoch 1987; Kenny and Acitelli 2001). Although some data on projection phenomena in the relationship domain show that partners adapt their level of projection to the actual similarity, partners also have a general tendency to assume more similarity than there really is. Davis et al. (1986), for instance, found that for 93 % of the participants who predicted their partner's product preferences the level of projection exceeded actual similarity. There are strong indications that the information of the partner is confused with the self (Aron et al. 1991), but also that partners are additionally motivated to ignore dissimilarities when perceiving the partner (Ickes and Simpson 1997). Nevertheless, the study by Davis et al. (1986) revealed that most participants would have increased accuracy by projecting even more. This remarkable finding indicates that if partners reduce the reliance on the own attitudes, another burden arises: they also seem to have difficulties in identifying relevant partner information beyond the own attitudes.

One reason for this difficulty may be the unavailability of relevant partner information. For the Davis et al. (1986) study, this explanation seems plausible. They used new futuristic products (at that time), such as an electric-powered automobile, a pop-top can for canned vegetables and a rental service for oil paintings and lithographs. Presumably relevant partner information on attitudes towards these specific products was sparse. By consequence, the own attitudes were indeed the best information the partners possessed. In this case partners can relatively easily overcome the other-information deficit by gathering information relevant to the

prediction task at hand, for example by discussing the product category. West (1996), for instance, found that people provided with the target's actual attitude towards some product alternatives, were quickly able to appropriately project and increase the validity of the other information cue in subsequent predictions.

A more fundamental problem however would arise to the extent that partners possess (or are provided with) valid other information, but for some reason fail to use it. The present series of studies is therefore designed to find out what happens when people are presented with such relevant other information, like their actual partners' attitudes.

We distinguish three possible reasons why partners (compared to strangers) can be expected to behave suboptimally. First, in close relationships partners typically have access to an extensive knowledge base about one another. We assume that each partner can activate a significant amount of partner-specific information from this broad knowledge base. We suspect that this activated information will impede good predictions of their partner's product attitudes. This is because the partner information is often invalid (e.g., Davis et al. 1986; Dunning et al. 1990) and because most of the information partners have about each other is irrelevant to the prediction task at hand (Swann and Gill 1997). In short, we expect that prior partner information will interfere with the more diagnostic new attitude information and eventually lead to *suboptimal use of the other information cue.*

Although the degree of own attitude projection will probably be related to the actual level of attitude similarity, we still expect that overall partners will assume high similarity. Therefore they will stick to their own attitudes even if valid other information is provided (Schul and Vinokur 2000). In other words, we expect partners to be more prone to *incorrect weighting of the prediction cues.*

Finally we also expect that people predicting their partner's attitudes, might be overconfident. Miscalibration can be a major barrier to information search and sensitivity (Alba and Hutchinson 2000). Research on the calibration of spousal attitude prediction is sparse. Yet, the existing findings point in the same direction and are consistent with intuition: spouses are overconfident when predicting the other's preferences. Swann and Gill (1997) found that people were overconfident in assessing their partner's current preferences. This confirms earlier findings that people in

general are overconfident in judging their peers (Dunning et al. 1990). More interestingly, Swann and Gill (1997) showed that overconfidence was directly related to both relationship involvement and relationship length. The main reason for this miscalibration in couples is that accuracy perceptions are often based on salient but nondiagnostic cues such as familiarity with the target and representational richness of the target (Swann and Gill 1997), which are both high for couples. In sum, couples might perceive themselves as better predictors of each other's attitudes than they really are. By consequence *overconfidence* might be an additional explanation for why partners, although presented with valid cues, fail to be accurate predictors.

With this article, we also attempt to make a methodological contribution. Until now, most cross-sectional studies compared partners with strangers to investigate the effect of partner knowledge. This may lead to incorrect conclusions. Finding a different result for a group of partners compared to a group of total strangers might not (solely) be due to the acquaintance factor but to underlying differing characteristics of the two groups. These differences can consist of either personal differences (people involved in a relationship may differ from singles) or differences in characteristics of the predictor-target dyad. For example, people typically associate themselves with similar others (Buss 1985), which leads to higher average similarity among partners than among strangers. We try to remedy this shortcoming by keeping the target (i.e. the partner) constant and manipulating the awareness that one is predicting the partner's attitudes.

STUDY 1

In this first study we investigate whether people have indeed difficulties predicting their partner's product attitudes in a situation where feedback is available. We also hope to identify the underlying reason(s). To this end, we will take a closer look at (1) the effect of other information compared to the own attitudes on prediction accuracy, (2) the amount of projection and (3) the degree of miscalibration.

Method

Stimuli. We compiled a heterogeneous set of 30 different bedroom images from furniture store catalogs, interior decoration magazines, and internet sites to serve as product alternatives. Each alternative consisted of a picture of the bedroom, the brand name (e.g., Vannes, Cerenna, ...), a description of the set-up (e.g., bed, two bedside tables and dresser), the finishing (e.g., cherry , rattan, ...), and the price. The stimuli were scanned from catalogs or downloaded from the internet to be presented on a color computer monitor. This product category was chosen because we assumed that the participants did not have pre-stored attitudes of their partner towards the presented bedroom sets.

Procedure and Design. Local graduate and undergraduate students who were in a relationship for at least six months were invited to the laboratory together with their partner. Thirty-seven couples participated. They had been dating for seven to 61 months with an average relationship length of 29 months. The couples were paid € 12 for their participation.

Participants took place in individual cubicles, equipped with a computer on which the entire experiment was conducted. All instructions were displayed on the computer screen. First they were asked to provide their own attitude (by choosing 'positive' or 'negative') towards each of the 30 bedrooms presented. Order of presentation was the same for all participants.

The individual participants were randomly assigned to either the partner condition or the stranger condition. We told them that we wanted to find out how well people could predict the attitudes of their partner versus those of a complete stranger and that, to this end, some would have to predict the attitudes of their partner (= partner condition) while others would predict the attitudes of a 'person X', an unidentified prior participant (= stranger condition). Next, the same 30 bedrooms were presented, in the same sequence as before. The respondents in the partner condition had to predict their partner's attitude ('positive' or 'negative') towards each product and to indicate their confidence level (0 to 100%) for that prediction. Immediately after each judgment, feedback about the actual attitude ('positive' or 'negative') of their partner towards the same bedroom was provided. The participants in the stranger condition went through exactly the same procedure but predicted the attitudes of and

received feedback on 'person X'. In reality, they received feedback on the actual attitudes elicited from their partners.

Results

We conducted an ANOVA with two between-subjects variables: (1) condition (partner vs. stranger), and (2) similarity (low vs. high similars). Similarity was calculated as the phi-coefficient between the predictor's and the partner's actual attitudes. A median split was performed on the phi coefficients (median = .19). Respondents with a similarity higher than the median are referred to as 'high similars', the other respondents are defined as 'low similars'. The dependent variables are: (1) prediction accuracy, (2) amount of projection, and (3) calibration. Below, we will discuss the results with respect to each of these variables.

Accuracy. We calculated prediction accuracy as the phi-coefficient between prediction and partner's actual attitude[1]. High similars ($M_{\varphi} = .42$) are more accurate than low similars ($M_{\varphi} = .14$) ($F(1, 66) = 40.7, p < .0001$). The main effect of feedback condition was only marginally significant ($F(1, 66) = 3.08, p < .09$), but the condition effect interacts significantly with similarity ($F(1, 66) = 4.50, p < .04$). The interaction is depicted in panel A of figure 2. Post hoc analyses Tukey HSD revealed that our expectation of lower accuracy of respondents in the partner condition compared to those in the stranger condition only holds for the low similars. For high similars this difference disappears.

Insert figure 2 about here

[1] For this and subsequent studies we also computed the absolute accuracy as the number of correct answers, and a sensitivity measure based on signal detection theory (McNicol 1972). The results for these two measures were always consistent with those based on the relative accuracy, and therefore they are not discussed in this paper.

For a more profound analysis, we decomposed the total accuracy score based on Kenny and Acitelli (2001). They proposed that the accuracy component caused by projection can be calculated as the product of the amount of projection[2] and actual similarity. Intuitively, this means that when partners have identical attitudes, projecting the own attitudes will lead to full accuracy. On the other hand, when partners hold opposite attitudes, projection will lead to complete inaccuracy. Also, when similarity is low, projection can have only a limited effect on total prediction accuracy. The part induced by other information then is the total accuracy score minus the projection component. We ran a 2 x 2 ANOVA on both components separately. For the accuracy caused by projection, we found a significant main effect of similarity ($F(1, 66) = 84.29, p < .0001$). Panel B in figure 2 shows that the accuracy due to projection is larger for high than for low similars. However, knowing that one is dealing with the partner does not influence the effect of projection on accuracy. For accuracy induced by other information, we found a significant interaction between similarity and condition ($F(1, 66) = 11.04, p < .01$), depicted in panel C of figure 2. Post hoc Tukey HSD comparisons revealed that for high similars awareness did not effect the contribution of other information on accuracy. Low similars, however, were less accurate in predicting the attitudes of their partner, and this was due to inferior use of other information.

Projection. As anticipated, high similars ($M_{\beta} = .33$) projected significantly more than low similars ($M_{\beta} = .47$) ($F(1, 66) = 5.79, p < .02$). This indicates that the respondents were able to adapt their level of projection to their actual level of similarity, consistent with West (1996). Moreover we find this effect irrespective of the condition they belonged to: respondents did not project more when predicting their partner than when predicting person X. Higher levels of assumed similarity with the partner are typically found on issues that are more central to the relationship

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[2] The amount of projection is measured as the path-coefficient represented in figure 1. Mathematically, the amount of projection is obtained by the following formula: [corr(own attitudes, prediction) - corr(own attitudes, partner's attitudes)*corr(prediction, partner's attitudes]/[1-corr(own attitudes, partner's attitudes)^2].

(Kenny and Acitelli 2001). It is possible then that people in general do not assume higher similarity with their partner for this particular product category.

Calibration. Since we have an independent and valid indicator of prediction accuracy (i.e. the actual attitude of the partner), we use the valid indicator paradigm to assess calibration (Alba and Hutchinson 2000). According to this paradigm, calibration can be defined as the extent to which confidence is a valid indicator of accuracy, as measured by the point biserial correlation between confidence and prediction accuracy over product alternatives. We found a significant effect of similarity ($F(1, 66) = 8.38, p < .01$) indicating that, although the level of calibration is rather low, high similars ($M_r = .28$) are better able to adapt their confidence to their actual accuracy level than low similars ($M_r = .15$). No condition effect is found. Respondents in the partner condition are neither worse nor better calibrated than those in the stranger condition.

Discussion

People who are aware they are predicting the attitudes of their partner did not outperform people who do not have this information. On the contrary, when similarity in product attitudes is low, people predicting the attitudes of their partner performed worse than those predicting an alleged stranger. Our results suggest that the inaccuracy is due to the use of incorrect or irrelevant other information activated by the mere awareness one is predicting the preferences of one's own partner. Apart from the provided feedback, people in the stranger condition could only rely on very general base-rate, or even stereotypical, knowledge. While not very informative, this information was also less misleading. In this sense the stranger condition is an appropriate benchmark to investigate the sources of inaccuracy in spousal attitude prediction.

When similarity is high, the negative effect of partner-specific information disappears. This corresponds to the finding of Hoch (1987) that spouses who are more similar are better able to capitalize on relevant partner knowledge than spouses who are less similar. Also, we found that people significantly increased their level of projection when similarity is high. By consequence, other information beyond the

own attitudes has a weaker effect on accuracy, possibly explaining why no difference is found for high similars.

We found no projection or calibration differences between partner and stranger condition. The observed accuracy difference can not be explained by the fact that people aware they are predicting their partner's attitudes overestimate attitude similarity or their prediction abilities.

STUDY 2

A first explanation for the accuracy difference observed in study 1 is that partner specific information could have a lower prior predictive value than the base rate and stereotypical information people use when predicting a total stranger. A second possibility is that the partner knowledge interferes with the new attitude information, such that people have more difficulties updating the information they have about their partner than about a stranger. With the second study we intended to extract the most viable explanation by manipulating the availability of feedback. When no feedback is provided, respondents can only base their prediction on their own attitudes and prior target knowledge.

Method

Couples that had been together for at least six months were invited to participate in this study. They were contacted through student email listings. Eighty-four couples, acquainted for six to 72 months with an average of 26 months, responded and received a reward of € 12 per couple. All participants were included in the analyses.

As in study 1 the procedure consisted of two phases. In the first phase, all respondents rated ('positive' or 'negative') the same 30 bedrooms we had used in study 1. Rating order was randomized. In a second phase, they were asked to predict the attitudes of either their partner or the unknown person X towards the bedrooms. In reality both groups predicted the product attitudes of their partner. Each time the participants were asked to indicate their confidence level (0 to 100%). Half of the respondents received the actual attitude of their partner after each prediction and half

of them obtained no feedback at all. Together with similarity (low vs. high similars) this results in a 2 x 2 x 2 between-subjects design. As in study 1, we conducted ANOVAs for accuracy, projection and calibration.

Results

Accuracy. Apart from a main effect of similarity ($F(1, 159) = 228.75$, $p < .0001$), we found a significant condition x similarity x feedback interaction ($F(1, 159) = 39.573$, $p < .05$), shown in panel A of figure 3. In the feedback condition, we found a significant condition x similarity interaction ($F(1, 77) = 7.76$, $p < .01$). When similarity is low, respondents in the stranger condition are more accurate than those in the partner condition ($F(1, 77) = 9.19$, $p < .01$). This difference is not observed when similarity is high ($F(1, 77) = .90$, $p > .34$). This confirms our findings of study 1. In the no feedback condition, however, there is only a main effect of similarity ($F(1, 82) = 13.20$, $p < .001$). Respondents with highly similar attitudes are more accurate than those with less similar attitudes, but we observed no differences between the partner and stranger condition.

Insert figure 3 about here

As in study 1, we decomposed the total accuracy level, revealing a main effect of similarity on the accuracy component due to the use of own attitudes ($F(1, 159) = 92.51$, $p < .0001$). As can be seen in panel B of figure 3, for high similars the accuracy caused by projecting the own attitudes is higher than for low similars. With respect to the accuracy component based on other information (panel C of figure 3), the results show a condition x similarity interaction when feedback is provided ($F(1, 77) = 5.38$, $p < .03$), but no significant effects when there is no feedback. When feedback is displayed, the results indicate that the accuracy component caused by other target information is higher in the stranger than in the partner condition when similarity is low ($F(1, 77) = 10.21$, $p < .01$). If similarity is high this difference disappears ($F(1, 77) = .02$, $p > .88$). Again, this is in accordance with study 1.

Projection. The only effect found on the amount of projection is a marginally significant effect of similarity ($F(1, 159) = 3.53, p < .07$). Similar to study 1, respondents with highly similar attitudes ($M_{\beta} = .42$) tend to project more compared with the low similars ($M_{\beta} = .35$).

Calibration. With respect to calibration, all three main effects were significant. Like in study 1, high similars ($M_r = .20$) are better calibrated than low similars ($M_r = .12$) ($F(1, 159) = 7.50, p < .01$). Also receiving feedback ($M_r = .19$), compared with not obtaining feedback ($M_r = .12$), seems to help the respondents match their confidence and accuracy levels ($F(1, 159) = 6.21, p < .02$). Unlike study 1, we also found a significant effect of condition ($F(1, 159) = 8.70, p < .01$). Contrary to expectation calibration was higher when respondents were aware the target was there partner ($M_r = .21$) compared with not being aware of this ($M_r = .12$). No interactions were observed.

Discussion

When we look at the conditions were no feedback about the partner's attitude was provided and hence participants could only rely on prior target knowledge, we found no significant accuracy differences between partner and stranger condition. This confirms our expectation that prior knowledge validity is not the main prediction burden. Moreover, the findings show that low similars who aware they are predicting the attitudes of their partner, face problems updating their prior partner knowledge. Consistent with study1, this also confirms that the use of other information beyond the own attitudes, and not the level of projection or calibration, is the main prediction burden partners face.

STUDY 3

Aim and Expectations

With this study we want to find out whether the obtained learning differences of study 1 and 2 are due to a difference in encoding or retrieval of the provided feedback. A first possible explanation is that people, encountering information of their partner's attitudes, fail to encode it or do so in a biased manner. Studies have shown

that people tend to encode information that is consistent with prior knowledge, thereby avoiding inconsistent and assimilating ambiguous information (Taylor and Crocker 1981; Srull and Wyer 1979). On the other hand, prior knowledge about the target is also found to have positive effects on encoding. Cohen (1981), for example, found that prior knowledge about a person allowed people to be more accurate at recognizing consistent, but also inconsistent information, probably because new information that violates prior beliefs is more salient and by consequence processed deeper and remembered well (Hastie 1984; Srull, Lichtenstein and Rothbart 1985).

An alternative explanation is that people encode information of their partner's attitudes at least as well as that of a stranger, but they retrieve other, less valid, information at the time of prediction. People already posses an extensive amount of information about their relationship partner, decreasing the probability that partners will retrieve the recently encoded feedback when predicting. In addition, partners probably already have well established prediction rules. These rules, based on many previous observations, are not very easily changed on the basis of the few instances of feedback received during the learning phase.

Since we expect that prior partner knowledge has both negative and positive influences on the storage of new information, we do not expect encoding to be the main burden in learning from feedback. We rather predict that the differences between partner and stranger conditions are mainly caused by retrieval biases that people encounter when predicting the attitudes of their partner.

With this study, we also want to investigate to what extent our findings can be replicated in another learning environment, i.e. an observational task instead of the prediction task used in the previous studies (similar to Broniarczyk and Alba 1994). It is not only a more realistic and less involving, but also a more limited learning environment than the prediction-learning task. In the latter, people not only receive information about the prediction target, but also about the validity of their prediction strategy itself.

Method

One hundred fourteen couples, acquainted for at least six months, participated in this study. The participants had been together for on average 26 months with a

minimum of six and a maximum of 89 months. Two participants were excluded from the analyses because the computer failed to store their responses. We used the bedroom stimuli of the previous studies, but we added 30 more bedrooms. These 60 stimuli were randomly divided in two sets of 30.

After providing their own attitudes towards 60 bedrooms, the respondents were asked to learn the target's attitudes on a first set of 30 bedrooms followed by a prediction test on a second set. The bedroom sets were counterbalanced and the presentation order within each set was randomized. In the *learning task*, the respondents were required either to predict or just observe the attitudes of the target. In the prediction task, the participants had to predict the target's bedroom attitudes and after each prediction they received feedback on the actual attitude of the target. Respondents in the observation task were immediately provided with the target's attitudes towards a specific bedroom. To proceed to the next bedroom, they had to click on one out of two buttons corresponding with the target's attitude ('positive' or 'negative'), which ensured that they would read the feedback. During the *prediction test*, all respondents predicted their partner's attitudes on the remaining 30 product alternatives. No feedback about the actual attitudes was provided. Like Cohen (1981), we attempted to disentangle encoding from retrieval by manipulating the moment the target is identified as the partner: before the learning task (= pre-learning awareness condition), after the learning task but before the prediction task (= post-learning awareness condition), or not at all (= control condition). Until the moment of identification we asked the participants to learn or predict the attitudes of an unknown person X, who was in reality also the partner. For respondents in the pre-learning awareness condition, the effect of prior partner knowledge should affect both encoding and retrieval processes. Participants in the post-learning awareness condition were still exposed to the effect of partner knowledge on retrieval of information when predicting. Target awareness should have no influence in the control condition where respondents remained unaware that the target is their partner. After the prediction test, the respondents were given a *memory test*. They were asked to remember the target's attitude on 15 randomly chosen alternatives out of the 30 bedrooms they saw in the learning task. They could answer with 'positive', 'negative' and 'no idea'.

This study has a 3 x 2 x 2 between-subjects design. The first variable is the moment the target is identified as the partner: before the learning task, after the learning task but before the prediction task, or not at all. A second variable is the type of learning task: prediction versus observational task. Finally, we again include similarity (high vs. low similars) in the analyses.

Results

Accuracy. Next to the positive effect of similarity on prediction accuracy (M_φ = .32 for high similars vs. M_φ = .16 for low similars) ($F(1, 214) = 39.62$, $p < .0001$), we also obtained the expected main effect of timing ($F(1, 214) = 5.89$, $p < .01$). As shown in panel A of figure 4, we found that respondents in both the pre-learning ($F(1, 214) = 11.21$, $p < .001$) and post-learning ($F(1, 214) = 5.66$, $p < .02$) awareness condition are less accurate compared to those in the control condition. No difference is observed between pre-learning and post-learning awareness conditions ($F(1, 214) = 1.03$, $p > .31$). This favors our prediction that not encoding but retrieval is the reason why partner awareness hurts prediction accuracy.

We also found a marginal effect of the type of learning task ($F(1,214) = 3.75$, $p < .06$). As expected, respondents learning from a prediction task (M_φ = .26) performed better on the prediction test than those learning from the more limited observation task (M_φ = .21). Type of learning task did not interact significantly with the other variables.

Insert figure 4 about here

With respect to the amount of accuracy obtained by using the own attitudes, we found, next to the straightforward main effect of similarity ($F(1, 214) = 131,22$, $p < .0001$), also a main effect of timing ($F(1, 214) = 5.47$, $p < .01$; see panel B of figure 4) and a marginal effect of learning task ($F(1, 214) = 3.67$, $p < 0.06$). Post hoc Tukey HSD analyses revealed that the amount of accuracy caused by projection is lower for the respondents in the control condition compared to those in the pre- or post-learning awareness condition. People who learned their partner's attitudes by predicting (φ =

.08) them had a higher level of accuracy caused by projecting their own attitudes (φ = .06).

Next, the analyses on the accuracy amount due to other information revealed the expected effect of timing (see panel C of figure 4). Respondents in the control condition were able to attain a higher level of accuracy using other information than those in the pre-learning awareness condition ($F(1, 214) = 22.09, p < .0001$) and also more accurate than those in the post-learning condition ($F(1, 214) = 15.30, p < .0001$). Again, being informed that the target is the partner before or after the learning task did not influence their amount of accuracy caused by the other information ($F(1, 214) = 1.11, p > .29$). This indicates that not encoding but retrieval of other information beyond the own attitudes is the main prediction burden.

Projection. The analyses on projection revealed a main effect of similarity ($F(1, 214) = 22.24, p < .0001$), indicating that also in this study people were able to adjust their amount of projection to their actual similarity (M_β = .42 for high vs. M_β = .28 for low similars). Second, we also found a main effect of timing ($F(1, 214) = 9.76$, $p < .0001$). Post hoc Tukey HSD analyses learned us that in the pre- and post-learning awareness conditions (M_β = .39 for both conditions) the amount of projection is higher than in the control condition (M_β = .26). This could explain why the level of accuracy due to projection is higher for these respondents compared to the control condition.

Calibration. The only significant effect we obtained is a main effect of similarity ($F(1, 214) = 22.07, p < .0001$). The confidence level of the high similars (M_r = .25) corresponds better to their actual accuracy level than that of the low similars (M_r = 14).

Memory test. The only effect found with respect to how many product attitudes the respondents could correctly remember was a main effect of learning task ($F(1, 213) = 27.87, p < .0001$). People who observed the attitudes when learning (M = 9.98) remembered more attitudes correctly than those doing a prediction task (M = 11.29). No differences were observed as a function of when the true identity of the target was revealed. If the moment of target identification would affect encoding, then a difference in attitude memory should be expected. These results additionally support that the previously received attitude information is present in memory, independent of

the awareness that the target is in fact the partner. By consequence, encoding is unlikely to be the main reason for the found accuracy differences

Discussion

The findings of this study suggest that, as expected, retrieval of information is the major burden partners face when predicting each other's product attitudes. No effect of target awareness was observed on the encoding of the provided information about the partner. Next to a higher use of their own attitudes, leading to a straightforward higher proportion of accuracy due to projection, those aware they were predicting the partner's attitudes retrieved less valuable other cues overall resulting in less accurate predictions. More generally, we can conclude that the low prediction accuracy of partners, found in other studies, is not because partners are not able to encode the relevant prediction cues, but because they fail to retrieve them at the time of prediction, independent of whether learning consists of active prediction or passive observation.

STUDY 4

Aim and expectation

Our previous studies indicate that elaborate knowledge base about the partner causes difficulties in retrieving valid information at prediction time. If this elaborate knowledge is indeed the underlying reason, we should find similar results in other interpersonal contexts where many possible prediction cues about the target are available. In this fourth and final study, we perform a direct test of the effect of vivid, but not necessarily valid, information on prediction process. We expect that when people possess a lot of information about someone, this information will cause retrieval deficiencies and will ultimately result in lower accuracy than when this prior target knowledge had not been available.

Method

One hundred and sixty-one local students received a € 7 participation fee for this study. They were invited to the laboratory in groups of maximum eight. Again,

the entire study took place on a computer in individual cubicles. In the first phase we asked them to give their own attitudes towards the 30 bedrooms we also used in study 1 and 2. In the second phase, the participants were randomly divided in two conditions. In one condition we asked the participants to predict the attitudes of a famous male singer and television personality towards the bedrooms. More specifically, we told them that the celebrity was willing to cooperate in our study by providing us with his bedroom attitudes. We also added a small biography with his main accomplishments and current projects. In the other condition, participants also had to predict the attitudes of a famous person, but they were told that we had to keep his identity secret. Nonetheless, we asked them to predict his attitudes as accurately as possible. Finally, half of the participants were informed that they would receive the actual attitude of the celebrity after each prediction. The other half did not receive any information about the bedroom attitudes.

In reality however, all participants predicted bedroom preferences of the first author of this article. Also in the feedback conditions, the presented attitudes actually belonged to the author. We expect that when the celebrity is identified an elaborate amount of vivid, but not necessarily valid, information will be activated about him. When the famous person is not identified, participants are expected to activate a much more limited information base.

This results in a 2 x 2 x 2 between-subjects design with the first variable being target identification. The prediction target was either identified (= celebrity condition) or not (= stranger condition), respectively leading to the activation of elaborate versus limited target knowledge. We also manipulated if the participants received feedback or not and we again divided the participants in low versus high similars.

Results

Accuracy. Apart from a significant main effect of similarity, again indicating that high similars perform better than low similars, we found a significant condition x feedback interaction, as shown in panel A of figure 5. When no feedback was provided prior celebrity information had no positive or negative effect on the prediction accuracy ($F(1, 188) = 1.72, p > .19$). When feedback was provided, however, people predicting the attitudes of the identified celebrity performed

significantly worse than those predicting the attitudes of the unidentified person ($F(1, 188) = 4.09, p < .05$). When comparing the feedback with the no feedback condition, the data show that people could take significant advantage of the information they received when the identity of the famous person was kept secret ($F(1, 188) = 6.16, p < .02$). When the identity was known, the feedback had no effect on the accuracy level ($F(1, 188) = .56, p > .45$).

With respect to the accuracy component due to projecting the own attitudes, we find the significant main effect of similarity ($F(1, 189) = 138.57, p < .0001$). As usual, the amount of accuracy due to projection is higher for the high similars than for the low similars (see panel B of figure 5). More interesting is the significant condition by feedback interaction ($F(1, 189) = 5.62, p < .02$) on the other information component as depicted in panel C of figure 5. Similar to the total accuracy measure, the data reveal that both conditions perform equally when no feedback is provided. ($F(1, 189) = 1.87, p > .17$). The participants in the stranger condition were able take significantly more advantage out of their other information compared to those in the celebrity condition when feedback is available ($F(1, 189) = 4.45, p < .04$). In other words, the feedback had a positive effect on the other information component in the stranger condition ($F(1, 189) = 6.03, p < .02$), but not in the celebrity condition ($F(1, 189) = .84, p > .36$).

Projection. No difference in the amount of projection between the celebrity and stranger condition is observed. The only marginally significant effect is the main effect of similarity ($F(1,189) = 3.81 , p < .06$). High similars ($M_\beta = .42$) projected more than the low similars ($M_\beta = .36$).

Calibration. We also observed no significant difference in overconfidence between the celebrity and stranger condition. Again, a significant main effect of similarity was found ($F(1,186) = 9.75, p < .01$). Participants who had attitudes similar to the prediction target ($M_r = .18$) were better calibrated than those with less similar attitudes ($M_r = .10$).

Discussion

This study extends our findings beyond the partner context. When people try to predict someone's product attitudes, they might encounter difficulties in applying

new prediction cues just because they already have a lot of information about that person. Additionally, the results of this study provide us with more direct evidence that the previously observed prediction deficiencies partners experience are very likely caused by their vivid partner specific information.

GENERAL DISCUSSION

The real difficulty in predicting the partner's product attitudes is due to the suboptimal use of new attitude information. Analogous to 'blocking' phenomena in other domains (e.g., van Osselaer and Alba 2000), our participants were not able to take full advantage of the provided information concerning the partner's product attitudes. More specifically, our findings reveal that, although people encode the information about their partner as well as about a stranger, they retrieve fewer valid cues at the time of prediction. The wife considering a birthday gift for her husband may take into consideration that her husband is a busy business person, consequently predicting that he will react positively towards a PDA. Although stored in her memory and extremely relevant to the decision task at hand, she might loose sight of the fact that he dislikes complicated technological products. In short, partner knowledge is found to interfere with additional information concerning the partner's product attitudes. This comports with previous studies indicating that other information is the main problem when predicting the partner's attitudes and therefore should project more (Davis et al. 1986; Hoch 1987). It should be noted though that in our studies sometimes participants did project more when predicting their partner's compared to a stranger's attitudes, but this could not compensate for the ineffective use of other information. Maybe instead of projecting more, partners should be encouraged to evaluate the diagnosticity of the information they retrieve about each other.

Based on our findings, one might be inclined to conclude that partner knowledge in general has negative effect on prediction accuracy. We would like to qualify this. When no external information about the partner's product attitudes is available, partner specific knowledge might actually lead to better predictions. Partner knowledge can be expected to have a positive effect on accuracy to the extent that

relevant instances of behavior were previously observed, the product attitudes were communicated, the attributes are objective etc. This might explain why some prior studies concluded that partners are poor predictors of the partner's attitudes (e.g., Davis et al. 1986; Swann and Gill 1997) and other studies found that partner's are good predictors (e.g., Funder and Colvin 1988).

Obviously further research is also needed to explore the generalizability of these results. For instance, we worked with relatively recent and inexperienced couples. We predict, however, that our findings will a forteriori hold for partners who are involved in a relationship for a longer period. Relationship length has been found to lead to an increasing amount of partner knowledge and, consequently, higher levels of overconfidence when predicting each other's attitudes (Swann and Gill 1997). Although a more extended pool of prediction cues will be available to the predictor, the motivation to learn from additional information might be expected to decrease and the retrieval of the most relevant prediction cues will become a more complicated task. In other words, the impact of new information concerning the partner's product attitudes is expected to further decrease with relationship length.

Our results were replicated in two different learning environments, both devoid of physical contact or communication. Although a lot of partner information is learned through observation, future research could examine the extendibility of our results in a face-to-face setting, where verbal and visual information exchange is possible. Studies on empathic accuracy showed that partners have a higher ability to infer each other's thoughts and feelings (Hancock & Ickes 1996) and that they communicate more efficiently (Ellis & Hamilton 1985) than strangers. By consequence, it could be expected that this communication advantage might to some extent alleviate the previously found learning burden.

Finally, our data also extend prior consumer research on the optimistic side: similarity in attitudes outweighs to a large extent the retrieval disadvantages due to partner knowledge. The literature suggests that similarity with respect to important aspects of life (ideology, values, ...) is an important determinant of both partner choice and relationship success (Buss, 1985). In this sense, successful couples may be shielded from dramatic mistakes by the very similarity that brought and keeps them together. Nevertheless partners cannot be similar with respect to the innumerable

specific preferences that drive decisions in everyday consumer life. Moreover, particularly in these situations where similarity is low, feedback provides an important source of information. So, while the prediction inadequacies that we studied may be a source of everyday nuisance rather than domestic drama, the importance of documenting them remains.

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FIGURE 1
PREDICTION MODEL

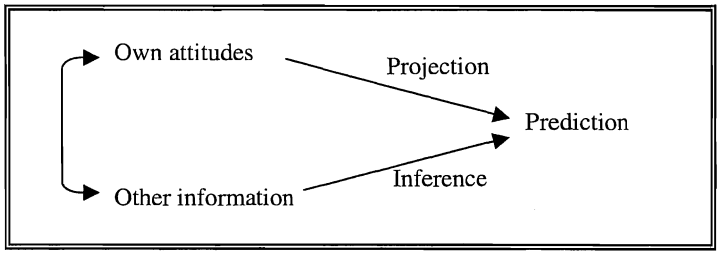
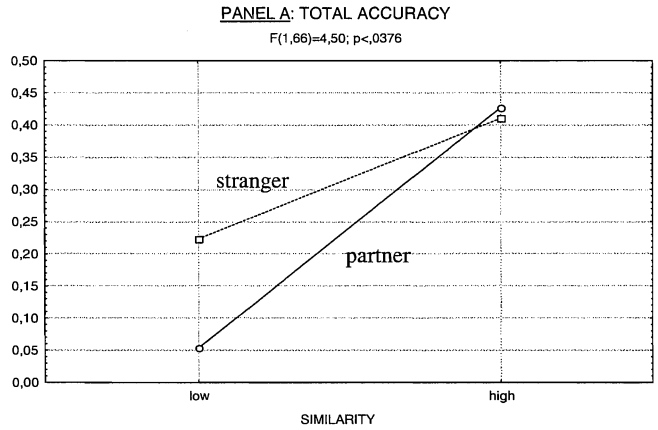
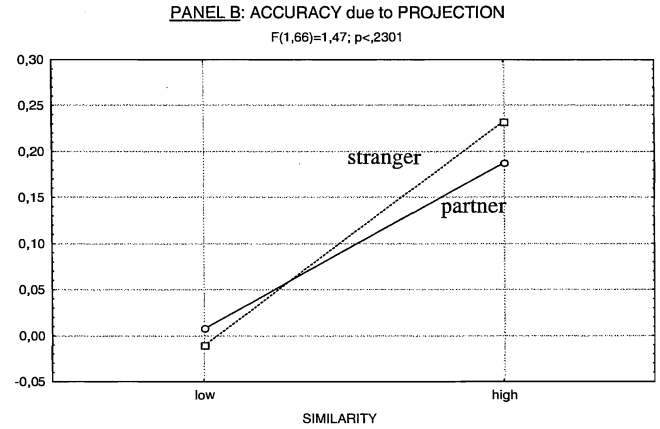


FIGURE 2

DECOMPOSITION OF THE INTERATION BETWEEN SIMILARITY AND CONDITION STUDY 1





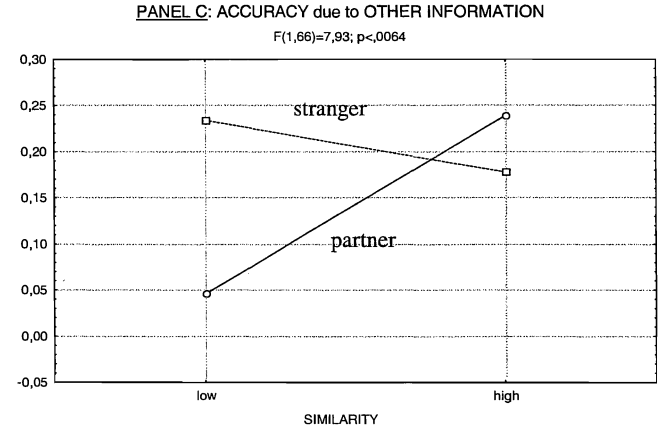


FIGURE 3
DECOMPOSITION OF THE INTERATION BETWEEN SIMILARITY, CONDITION AND FEEDBACK
STUDY 2

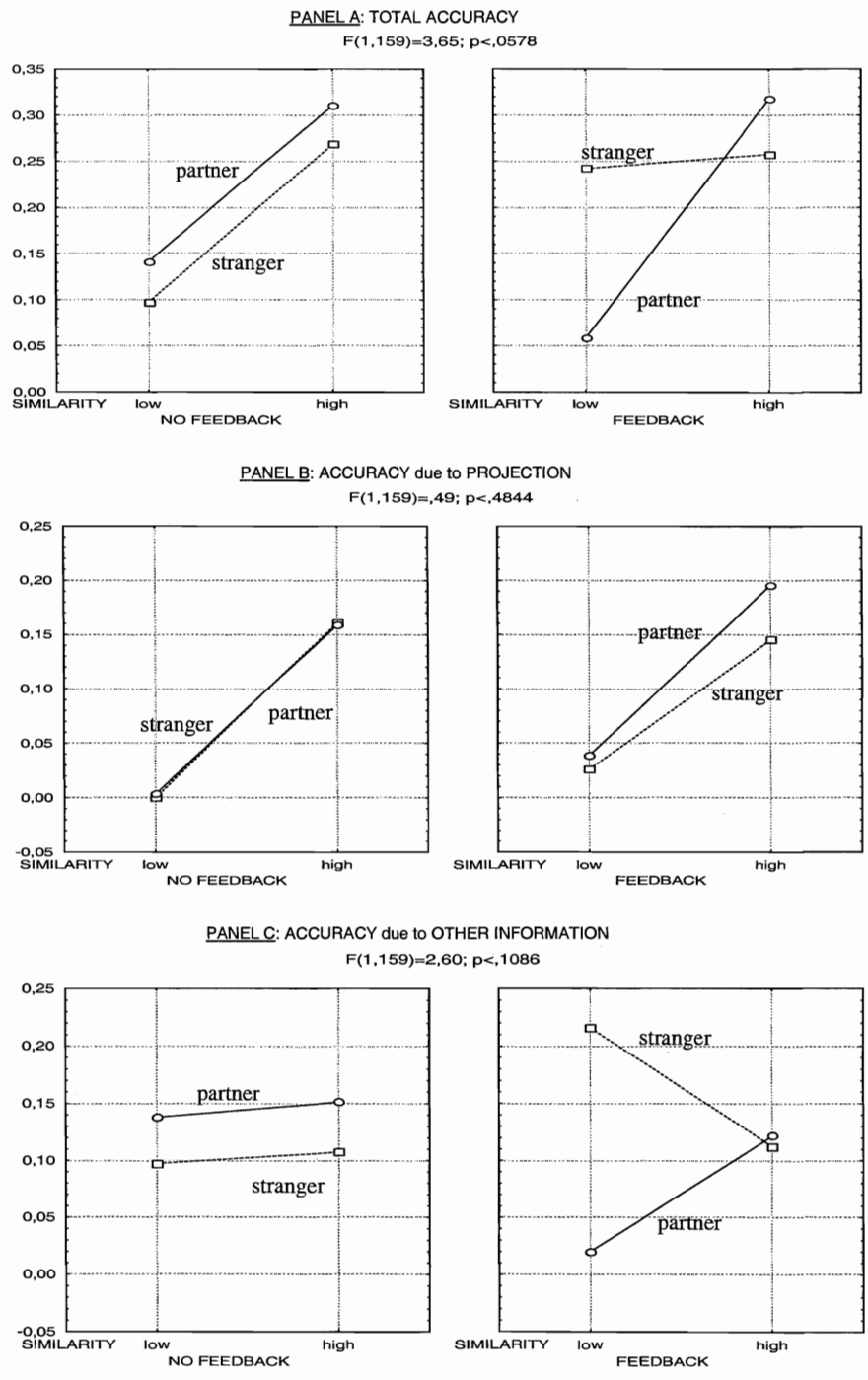


FIGURE 4
DECOMPOSITION OF THE MAIN EFFECT OF THE TARGET IDENTIFICATION MOMENT

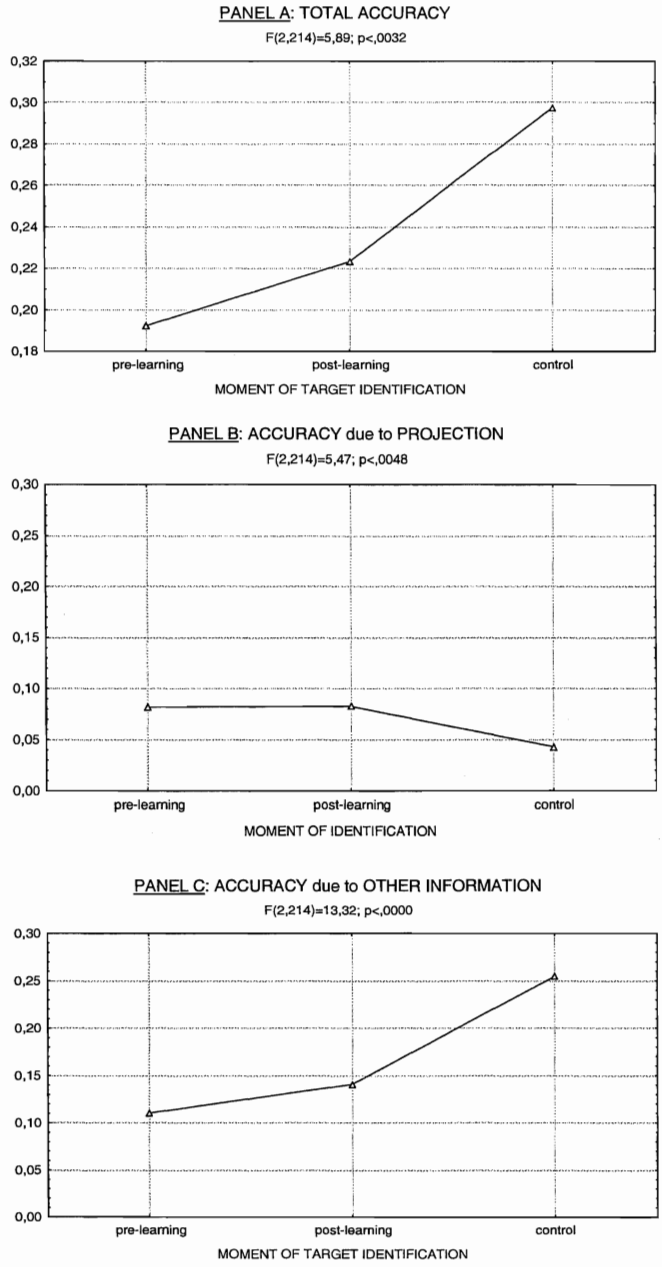


FIGURE 5
DECOMPOSITION OF THE INTERATION BETWEEN SIMILARITY, CONDITION AND FEEDBACK
STUDY 3