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Question Asking as a Dyadic Behavior

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Abstract

Huang, Yeomans, Brooks, Minson, and Gino (2017) studied the role of question asking in conversations. They claimed to have identified "a robust and consistent relationship between question-asking and liking" (p. 1), where liking is affected largely by follow-up questions, rather that switch questions. They concluded that their "data support a trait-level model of question-asking behavior." (p. 12), and that "question-asking is a critical component of active listening." (p. 14). Our theoretical, methodological and empirical re-analyses of their speed-dating study (Study 3), where liking was operationalized as being offered a second date, lead to different conclusions. Their speed-dating data conforms to an asymmetric block design, and should have been analyzed using the social relations model, to unconfound the effects of the actor, partner, dyad, and gender. Social relations modeling showed that about a third of the variance of question asking can be attributed to a trait, but that another third of the variance can be attributed to the specific dyad, and some smaller portion of the variance can be attributed to the partner's tendency to elicit question asking. Bi-variate social relations modeling showed that latent scores of follow-up questions and switch questions are largely isomorphic. Finally, asking an opposite-sex partner questions tends to be inversely related to being offered a second date, at least for men. Based on theory, our reanalysis, and other empirical findings, we conclude that offering a second-date is not equivalent to liking, and that question asking is different from listening.

Keywords

Social Relations Model; Asymmetric Block Design; Question Asking; Listening; Speed Dating

Huang et al. (2017) reported a speed-dating study (Study 3), in which they measured how many question each participant asked and whether or not each partner offered a second date. Based on their analyses, they concluded that asking questions is a trait that predicts the likelihood of being offered a second date, especially when the questions asked are follow-up questions. We suggest that their analyses are incorrect and that a correct analysis of their data, taking into account the features of their design, leads to different conclusions, and illuminates additional theoretically important features of their data.

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Speed-dating data, of the sort presented by Huang et al. (2017), conform to an *asymmetric-block design* (e.g., Malloy & Albright, 2001) where men and women interact with multiple partners of the opposite sex, but not with partners of the same sex. Data from an asymmetric-block design is properly modeled within the more general approach of social-relations modeling (SRM; Malloy & Albright, 2001), and has been proposed for studying speed dating (Ackerman, Kashy, & Corretti, 2015; Jauk et al., 2016). Detailed discussions of the SRM are available elsewhere (Kenny, Kashy, & Cook, 2006; Malloy, in press; Malloy & Albright, 2001; Malloy & Kenny, 1986; Warner, Kenny, & Stoto, 1979); here we give a brief summary.

The SRM is a method for decomposing the variance in dyadic scores into four components: actor, partner, relationship, and error. In the context of asking questions, actor variance reflects individual differences in one's tendency to *ask* many or few questions; partner variance reflects a different trait, that is, the tendency of some people to *elicit* many or few questions; Relationship variance reflects the tendency to ask a uniquely high or low number of questions in the presence of a specific partner. Finally, error variance can be separated from relationship variance when more than one measure is available. Otherwise, the error variance reflects both random error and relationship variance. Actor, partner and relationship effects are the basis for the computation of variance components bearing the same name. These variance components are tested for statistical reliability, and quantify conceptually distinct phenomena. When dyadic scores are not partitioned, actor, partner and relationship effects are confounded. One cannot know whether unique behavior occurs in specific dyads, whether there is a stability of behavior emitted (i.e., actor effects) or elicited (i.e., partner). With interacting males and females in speed dating, responses to those of the opposite sex, actor, partner and relationship effects can be partitioned for the sex of the actor and the sex of the partner. Otherwise, these effects are confounded as well.

In addition to component variances, their covariances also quantify distinct relationships. Actor-partner covariance reflects *generalized reciprocity* (e.g., the tendency of people who ask many or few questions to elicit a similar number from partners); and dyadic covariance reflects *dyadic reciprocity* (e.g., the tendency of a person who asks a specific partner many or few questions, to elicit a similar number from that specific partner). Furthermore, the actor and partner effects can be correlated with variables not analyzed with SRM (e.g., test whether offering many second dates, or being offered many second dates, is correlated either with the tendency to ask many questions or the tendency to elicit many questions). To reiterate, with data from an asymmetric-block design, all the above variances and covariances can be estimated separately for each sex, when responding to those of the opposite sex.

Our goal is to demonstrate that several conclusions offered by Huang et al. (2017) are erroneous and that new conclusions and additional insights can be gained by taking into account both the dyadic nature of question asking, and the features of the asymmetric-block design. Specifically, we show that when Huang et al. (2017) properly controlled for actor and partner effects, relying on non-SRM method (Cameron, Gelbach, & Miller, 2011), they improperly ignored the conclusions suggested by their analyses, and that considering dyadic components, specified by the SRM, reveals new aspects of their data. To elucidate these

concerns, we next briefly summarize the hypotheses and conclusions in the Huang et al. (2017) study.

Huang et al. (2017): Summary of Key Arguments and Findings

Huang et al. (2017) hypothesized that "people who ask more questions, particularly follow-up questions, are better liked by their conversation partners" and that this effect is mediated by perceived responsiveness of the question asker. Huang et al. (2017) tested the main effect of asking questions on liking with two experiments and one study of speed dating. In the experiments, they asked dyads to "chat" by sending instant messages, presented on computers, and manipulated question asking by instructing one partner to ask either few or many questions. In these studies, they indeed found that asking more questions led to an increase in liking by the partner, albeit the effects in both experiments were not strong, *Cohen's d* = 0.35, and 0.27 (i.e., below the reported mean of .42 of 25,000 effects in social psychology, Richard, Bond, & Stokes-Zoota, 2003). Moreover, in both experiments they found that the question-asking effect on liking was mediated by perceived responsiveness.

In the third study, the authors assessed face-to-face question asking during speed dating with a computerized algorithm that analyzed the recorded text, and they tested its effects on being offered a second date, as a behavioral measure of liking. Their analyses of speed-dating data (Study 3), led them to conclude "These results suggest that most of the meaningful variation in question-asking behavior is at the level of individual daters, not at the level of specific dates." and "this suggests that our data support a trait-level model of question-asking behavior in this context." (p. 12). Huang et al. (2017) also concluded that those who ask more questions, especially follow-up questions as opposed to switch questions, are more likely to receive a second date (and that males offer more dates than females).

Huang et al. (2017): Unwarranted conclusions

Huang et al. (2017) presented a plot (Figure 3) suggesting that the number of second dates offered to an "asker" (actor) is correlated with the rate of follow-up questions per turn the person asked. They interpret this association to be a trait (between person) effect, but this analysis was not adequately adjusted for actors and partners, as one of our reviewers properly pointed out. Next, to "formally test the relationship between the extent of a person's question asking and the chances that their partner will want a second date with them" (p. 12), they presented a series of logistic regression models. When they used a model that does not adjust for actor and partner or their sex, they found evidence that follow-up question rate is positively associated with the log odds of being offered a second date. Yet, once they controlled for actor and partner (but not for dyadic composition), the effect vanished (see column 6 in their Table 5). Thus, based on their own results, there is no evidence that question asking is related to the likelihood of being offered a second date.

Huang et al. (2017) recognized that testing their hypothesis in the context of speed dating is a challenge because "each speed-dater is free to choose their question-asking rate on the basis of personal and situational factors, including aspects of their partner in that particular date." In fact, the structure of the speed-dating data is not only a challenge for testing their

hypothesis, but also an opportunity to shed light on the social causes of question asking. This opportunity is the focal point of our commentary. We were able to seize this opportunity by reanalyzing the data thanks to Huang et al. (2017) who publicly shared their data (see their author note regarding online supplementary materials), and following their example we share the codes of our analyses of their data (see below).

Method

Participants and procedure

We reanalyzed the Huang et al. (2017) speed-dating data (see their Study 3 for details). In this study, 110 men and women participated in one out of three speed-dating sessions, where "[e]ach dater went on 15 to 19, 4-min speed dates during a session. Every person wore a microphone to capture the dialogue during the dates", and a computer algorithm "estimated question-asking by counting conversational turns that included a question mark". Finally, "[a]fter each speed date, participants … indicated whether they would want a follow-up date." (p. 11). Huang et al. (2017) used data with 1,961 unique dyadic scores. Of these, eight had a score of zero on all question asking measures, and thus we deleted them culminating in 1953 dyadic scores. In these data, each record contained each actor's decision to offer or not offer a second date, and the question asking behavior of the partner. We matched the partner data to the actor, such that each record contained the second-date choice of the partner, and the question asking behavior of the actor, so we could properly run the analyses on these data.

Measures

For each speed-dating session, Huang et al. (2017) measured the number of conversation turns. Then they both counted the *number* of conversational turns that included a question mark, and calculated the *proportion* of all conversational turns that included a question mark. Huang et al. (2017) counted the *total* number of questions and the proportion of *total* questions out of all conversation turns. In addition, they obtained, in a similar manner, *follow up* questions ("questions that encourage the partner to elaborate on the content of their prior conversational turn."), *switch* questions ("about a new topic, one that was unrelated to what the partner had already discussed"), and other types of questions used less frequently, which we thus ignored in our analyses. They assumed that the total number of turns with questions (of any type) and the proportion of turns with questions (of any type) reflect the same theoretical construct—questions asking in general (or a specific type of question asking). However, whereas Huang et al. (2017) assumed that the specific type of questions reflect different constructs (i.e., follow-up questions leading to liking, but not switch questions), we tested whether this were the case with their data. These six measures (number and proportion for total, follow up, and switch questions) allowed us to estimate latent constructs with relationship separated from random error, while reflecting the theoretical constructs proposed by Huang et al. (2017). We describe these latent variable next.

Total number of questions: number and rate—We constructed a latent variable of question asking by using the number of questions and the proportion of conversational turns

that included a question as indicators of question asking. We rescaled one of the indicators because the measures are on vastly different scales. That is, the *number* of questions had a mean (*SD*) of 9.84 (5.27), whereas the proportion of all conversational turns that included a question had a mean (*SD*) of 0.22 (0.11). This situation is known in the context of Structural Equation Modeling as ill-scaled covariance, and "[t]o prevent this problem, variables with extremely high or low variances can be rescaled by multiplying their scores by a constant" (Kline, 2016, p. 67). Therefore, we rescaled the proportion of all conversational turns that included a question by multiplying this indicator by a factor of 50. The advantage of this latent variable is that it used all the available data (including questions that were not classified as either follow up or switch), but the disadvantage is that it required rescaling. Another disadvantage is that the indicators of this latent variable share the same numerator. That is, the proportion variable is based on the number of questions, divided by number of turns, such that both the indicator based on number of questions and the indicator based on the proportion share the same count. This may inflate the correlations between the indicators and lead to underestimation of the error variance and hence to an overestimation of dyadic variance.

Follow up and switch questions as indicators—We constructed another latent question-asking construct by using the *number* of follow up questions and *number* of switch questions as indicators. The advantage of this construct is that both indicators are on the same scale (number of questions) and does not require rescaling. Another advantage of this latent measure is that it is free of concerns regarding common numerator, and thus free of risk of underestimation of error variance. The disadvantage of this measure is that Huang et al. (2017) hypothesized that these indicators may have different theoretical meaning, where follow up questions yields higher partner liking than switch questions. Yet, the zero-order correlation of these two measures was $r = .87$. Thus, we used these measures as indicators of a single, latent, question-asking construct.

Follow up questions: number and rate—We constructed a latent follow-up question-asking construct by using the *number* of follow up questions and *rescaled*-follow-up questions per turn as indicators multiplied by 50. The advantage of this latent construct is that it assess the focal variable of Huang et al. (2017), but its disadvantage is that it requires rescaling.

Switch questions: number and rate—We constructed a latent question asking construct variable of switch question asking in the same manner as follow up questions. The advantage of this latent construct is that, in combination with the latent variable of follow up questions, it allows calculation of *bivariate* SRM to test whether follow up questions and switch question are different at all.

Offering second dates—This information was also recorded by Huang et al. (2017). This variable, offering a second date, is a natural dichotomy (yes/no). Yet, using the SRM logic, we also calculated the total number of dates each participant offered. This total is akin to an actor effect, as it reflects the actor's tendency to offer many or few dates.

Being offered second dates—Similar to the above, we calculated the total number of dates that the dater was offered by his or her partners. The latter is akin to a partner effect, as it reflects the tendency of the actor to elicit many or few date offers.

Being offered a second date—This is the yes/no decision of one's partner to offer a second date.

Analyses

There are two software applications available for estimating SRM parameters for data from an asymmetric-block design: A stand-alone computer program BLOCKO that employs an ANOVA approach (Kenny & Xuan, 2006), and SPSS code for multilevel modeling (MLM; Ackerman et al., 2015). Each approach has its advantages and limitations. Therefore, we used both analyses to reap maximum information from the data reported by Huang et al. (2017). In addition, with the help of David Kenny, we wrote R code to analyze the dichotomous data (Kenny, 2017)[1].

BLOCKO, and the ANOVA approach it applies, has two limitations. First, it requires the same block sizes. That is, if there are 16 men interacting with 16 women, it requires that there will also be 16 women interacting with 16 men. Second, if there are multiple groups (e.g., speed-dating sessions), it requires identical group sizes. If the data do not conform to these requirements, Kenny recommended dropping or imputing the missing data. In the data reported by Huang et al. (2017) there were two groups with 19 males and females each, and in the third group, there were 18 males interacting with 16 females. In all groups there were some missing data either because daters did not meet all potential opposite sex participants, or due to failures in recording the questions (see explanation in Huang et al., 2017). The rate of missing data was 4.85%, 2.08%, and 1.76% in the three dating sessions, respectively. We deemed this rate inconsequential giving the large number of participants per group. Therefore, we imputed all missing data with means within person. Next, we randomly discarded three males and three females from the group with 19 dates, and two males from the group of 18 males. This yielded a data set of 16 males and 16 females within each group that was amenable to social relations modeling with BLOCKO.

In contrast, the MLM approach (Ackerman et al., 2015) to the asymmetric-block design can handle missing data and unequal group sizes and has the benefit of estimating standard errors for each component of the SRM. However, this solution cannot estimate the bi-variate SRM (see Table 6 in Ackerman et al., 2015), nor does it extract actor, partner, and relationship scores for further analyses. Moreover, the SPSS code for MLM takes a long time to converge (e.g., six iterations required for convergence can take three days on the full data, and about one day on the equal-group size data). Therefore, we first verified that results obtained with BLOCKO and results obtained with MLM (on the same equal-groups data) were identical. Next, we reported all results that could be analyzed with MLM, and added a comparison of the estimates obtained with the reduced data. Finally, we reported results that we could analyze only with the equal-groups data (with BLOCKO). In sum, we

[1]We also used R to prepare the data for SPSS and BLOCKO analyses, and to read SPSS outputs into table format. All R codes, and examples of SPSS and BLOCKO codes, can be downloaded from https://osf.io/x69u2/.

ran 12 SRM analyses. That is, we ran MLM analyses with SPSS for each of the four pairs of latent variables on the complete data, and once again, for the reduced data containing equal group sizes with missing data imputed. In addition, we ran BLOCKO, using the ANOVA approach, on the four pairs of indicators on the same reduced data.

Two of the eight MLM analyses did not converge. To achieve convergence for these analyses, we both normalized the question asking indicator with a square-root transformation, and following Ackerman et al. (2015), we dropped dummy codes from the model representing the three different speed-dating sessions[2], as differences in group means are is likely to be negligible "[b]ecause the groups that comprise speed-dating studies are typically randomly formed" (Ackerman et al., 2015, p. 99).

Next, there is no agreed upon method to analyze dichotomous data from an asymmetric block design. Thus, we used several approaches for analyzing the offer of a second date. First, following Jauk et al. (2016), we used the MLM solution proposed by Ackerman et al. (2015). However, this solution ignores the fact that the variable at stake is dichotomous. Therefore, we also resorted to a solution suggested by David Kenny (2017) that entailed using the *glmer* function of the *lme4* package in *R*. In addition, we wrote R code to analyze the data with the same ANOVA approach used in BLOCKO to facilitate producing actor, partner, and relations scores of question asking, so we can correlate these with number of second dates offered and received. Finally, we also used the *glmer* function to test the effects of question asking variables on the log likelihood of being offered a second date.

Results

The standardized SRM estimates for total number of questions (Table 1) suggest that for males, 32% of the variance stems from the actor, 18% from the partner, and 32% from the specific dyad. The actor variance suggests that there is a question-asking trait, such that some daters ask consistently many and some ask few questions across multiple dates. Yet, the partner variance suggests that some of the variance in asking question is due to partners that tend to elicit many or few questions. More relevant to the theoretical point of this paper, the relationship variance suggests that about a third of the variance stems from unique level of questions asking directed to specific partners, after controlling for the tendency to ask questions in general, and for partners' tendencies to elicit many or few questions. In addition, the correlation of −.60 between the actor and the partner effects suggest that males who ask many questions tend to elicit few questions from females. The results for females, in the lower part of Table 1, are similar to the results for males. Moreover, there was a significant standardized relationship covariance of −.12, suggesting that within each date, the more one partner asked questions, the less the other one did, which makes sense given that the time of interaction was constrained.

Importantly, in Table 1 all of the standardized estimates, in the column next to last that are based on the complete data, are similar to the estimates based on the reduced data reported

[2]The MLM approach, used in this SPSS code, estimates in addition to the SRM variances reviewed above, variance stemming from group differences.

in the last column. The estimates reported in the last column are identical, whether computed with SPSS or with BLOCKO. This convergence suggests that analyses based on the reduced data are not systematically biased relative to the complete data.

Table 2 through Table 4 present the same type of SRM estimates for the remaining latent question asking constructs. The results are similar to those in Table 1 and show that actor and relationship effects accounted for roughly 1/3 of the variance, and that partner effects accounted for about 15% of the variance. These tables also show that asking many questions is reciprocated, significantly, by being asked few questions, both at the person level (i.e., actor-partner covariance, or generalized reciprocity) and at the dyad level (i.e., relationship covariance, or dyadic reciprocity), with the exception of female actor-partner and relationship covariances when using follow-up questions and switch questions as construct indicators (Table 2).

In Table 5, we present the *bivariate* SRM analysis of the follow-up questions and switch question constructs. Only BLOCKO produces this analysis and thus it is based on the reduced data. Whereas Huang et al. (2017) suggested that follow-up questions and switch questions are separate constructs, we sought to assess the discriminant validity of these constructs (Campbell & Fiske, 1959), and indeed, the results of Table 5 suggest otherwise. At the individual level, we correlated males' and females' actor effects in each construct and at the dyadic level correlated unique questioning in each dyad. Specifically, both the actor-actor and the partner-partner correlations, for males and females are 1.00 or .99. This suggests that the components of the variance that are trait like, that is, the tendency to either ask (actor-actor) or to elicit (partner-partner) questions are identical, whether measured with follow-up questions or with switch questions. The negative correlations for actor-partner and partner-actor reflect the generalized reciprocities found in Table 1 through Table 4. That is, the more one asks questions, the less the partner ask questions, only that in Table 5, these correlations are between alternative constructs (e.g., the more one asks follow-up questions, the less one elicits switch questions). The *intrapersonal* relationship correlations suggest that if one asks uniquely high or low number of one type of questions one is also likely to ask a similar amount/rate of the other type of questions. Whereas these correlations do not indicate unity (.78 for females, and .84 for males), they support convergent rather than discriminant validity, where their minor diversion from each other may reflect lower relationship-score reliability. Finally, the small *interpersonal* relationship correlations suggest that, consistent with the results of the univariate SRM, excluding Table 2, that the more one asks a unique dating partner one type of question, the less the partner responds with the other type of question. This suggests negative dyadic reciprocity.

Next, we present in Table 6 a social relations analysis of the second-date offer. The two estimation methods (the one ignoring the binary nature of the second-date offer using SPSS, and the one using a logistic model in R) yielded different standardized estimates, but equivalent patterns for the variance components. That is, in both methods, most the variance is attributed to relationship and error, next to the actor, and last to the partner. Specifically, people appear to be choosy (they uniquely offer some partners a second date), but this cannot be separated from error. Second, people differ systematically in their tendency to offer many or few second dates (actor effect). Third, to a lesser degree, people differ

systematically in the effect they have on their partners, such that some tend to elicit many and some few offers for a second date (partner effect). Interestingly, both estimates suggest negative generalized reciprocities. That is, people who offer many second dates are those that tend to receive few offers of second dates. All the estimates just discussed are similar for men and women. Finally, both methods suggest a weak but *positive* dyadic reciprocity. That is, a person who offers a second date to a specific partner, is likely to be offered a second date by that specific partner beyond chance. This model can be considered a null model that controls for the asymmetric block design in predicting the likelihood of being offered a second date, and we used it (see below) to test the effects of asking questions on being offered (yes/no) a second date.

Does question asking predict a second date?

Huang et al. (2017) concluded that those who ask more questions are more likely to receive second date offers (and that males offer more dates than females). To address this question, we first correlated the actor scores, and the partner scores, on the asking questions construct with the sum of dates offered and received by each actor. As can be seen in Table 7, there is a similar trend among both males and females; those who ask many questions receive fewer date offers, where the correlation based on the entire sample is statistically marginal, $p = .06$. The sign of these correlations is opposite the conclusions of Huang et al. (2017). Table 7 also indicates that males who ask many questions tend to offer more dates, and that males who elicit many questions from females tend to receive few date offers. The pattern for females is similar but not statistically reliable. Thus, question asking among male may reflect eagerness, rather than listening. Yet, this analysis is mute about the chance of being offered a second date by a specific partner.

Finally, we tested the effect of asking question on the likelihood of being offered a second date by a specific partner (yes/no). In this analysis, we repeated the type of analysis reported in Table 5 by Hunag et al., (2017) while controlling for dyadic effects. To do so , we used the logistic model depicted in Table 6 as a null model, and added to it each of the six measures of question asking we used above and their interactions with gender. We entered each question measure both as a trait (mean number of questions each person asked), and as a date-level score (question asking per date centered about that mean). We also controlled for group membership (the three speed-dating sessions). However, none of the two group dummy codes was significant, and thus for simplicity, we removed these variables from the results presented in Table 8.

As can be seen in Table 8, significant effects emerged only for the date-level scores. That is, there is no evidence that a trait of asking questions is related to a chance of being offered a second date. Second, the patterns of significant results for follow-up questions, switch questions, and total questions are similar, where the most pronounced effects are for total questions. Yet, for the total number of questions there is evidence of an interaction with gender, whereas for the rate of question per turn, there seems to be negative association. To interpret these findings, we plotted the likelihood of being offered a second date (Figure 1) both for total number of questions (Panel a), and for the rate of total questions per turn (Panel b). These plots suggest that for men, asking more questions relative to one’s average

is associated with reduced likelihood of receiving an offer for a second date. For females, the likelihood depends on the type of measure. Thus, except for the results for females using the total number of questions, all other estimates are opposite the prediction of Hunag et al., (2017).

Last, we ran additional models (see Appendix) where both follow-up questions and switch questions at the date level were used as predictors in the same model (including their interactions with gender). These analyses test whether follow-up questions predict second-date offer beyond what switch questions predict. In these analyses (one for number of questions and one for rate of questions per turn), the only significant effect was for gender, failing to show that follow-up questions better predict the likelihood of a second-date offer than switch questions.

Discussion

Using the SRM, we reach conclusions that are different from those reached by Huang et al. (2017). First, Huang et al. (2017)) suggested that "… most of the meaningful variation in question-asking behavior is at the level of individual daters, not at the level of specific dates." In contrast, our SRM analysis suggest that variance in question-asking behavior is distributed such that only about a third of the variance could be attributed to the individual dater, another third to the specific date, and yet roughly additional 15% could be attributed to partners who tend to elicit or suppress question-asking behavior. Thus, the SRM suggests different conclusions about the role of trait vs. specific dates in driving questions-asking behavior, and points to a source of variance (partner elicitation of questions) hidden from view without SRM.

Second, Huang et al. (2017) proposed that specific types of questions reflect different constructs with different effects (i.e., follow-up questions leading to liking, but not switch questions). Yet, the bivariate SRM results suggest that at the individual level, measures of both types of questions have correlations of 1.00 or .99. That is, both actor-actor and partner-partner correlations among men and women alike, indicate that the level of asking one type of question is completely predictable from the level of asking the other type of question. Thus, these measures seem to capture equally a tendency to ask, or to elicit, many or few questions in general. At the specific date level, we found that the lowest *intrapersonal* relationship correlation between follow-up and switch question was .78, leaving a possibility that these construct may have some small divergence. Yet, neither of these constructs differentially predicted being offered a second date.

Third, Huang et al. (2017) concluded that "people who ask more follow-up questions find that more of their partners want to go on second dates with them" (p .12). In contrast, we found that, if anything, people who ask more questions, of any type, find that *fewer* of their partners want to go on second dates with them. In addition, the SRM revealed that males who elicited many questions are less likely to be asked on a second date. This may suggest that asking questions, as captured in the automatic recording of speed dating, is not related to liking. Alternative accounts of these data are more likely. Our accounts reconsider the constructs of both question asking and of offering a second date.

Second date offer vs. liking and question asking vs. listening

The finding that question asking, at least for men, is negatively related to the likelihood of being offered a second date begs the question of why there was no support for the hypothesis of Huang et al. (2017) that asking questions increases liking. It could be that offering a second date is not a measure of liking, or that question asking is not an indicator of active listening, or both.

Huang et al. (2017) suggested, "agreeing to a second date" is "a behavioral measure of liking" (p. 11). Yet, two types of evidence suggest that a second-date offer and liking are different constructs. First, an SRM study of speed dating indicated that narcissism is positively correlated with actual speed-dating success, but not with ratings of friendliness (Jauk et al., 2016). Second, SRM analyses of offering a second date, reported here and elsewhere, seem to behave differently from the SRM of liking. Specifically, "Negative generalized reciprocity alongside positive dyadic reciprocity is a common finding in speed-dating research" (Jauk et al., 2016, p. 134). That is, those who offer many dates are reciprocated with few offers of dates, but in each dyad, there is some agreement among daters regarding whether or not they want a second date. Yet, both in the context of speed dating, and in general, SRM of *liking* yields different patterns. In speed dating, where women elicit more second dates from men, they are not perceived as more suitable for friendship than men are (Jauk et al., 2016). Also, whereas SRM of actual offers of a second date yields consistently negative reciprocities (in our data and elsewhere); perception of being a suitable friend, did not yield significant reciprocities, and for females this correlation is positive (Jauk et al., 2016). Furthermore, a variable that may be related to liking, participants' levels of connection toward their dates, show positive reciprocity (but significant only for females, see Table 4 in Ackerman et al., 2015). Moreover, SRM of liking, not in the context of speed dating, suggest either no (Kenny, Bond, Mohr, & Horn, 1996), or positive generalized reciprocities (see Table S2 in Supplemental Material in Salazar Kampf et al., 2017). Thus, whereas offering a second date shows consistent generalized negative reciprocities (reflecting perhaps the rejection of eager daters by choosy partners), liking does not, and thus offering a second date should not be considered as a measure of liking.

Huang et al. (2017) also concluded "[w]e identify and show evidence that question-asking is a critical component of active listening" (p. 14), and suggested that active listening "… has been largely overlooked in social psychology" (p. 14). Yet, research in social psychology has documented the powerful effects of listening on shaping the behavior of the speaker (Bavelas, Coates, & Johnson, 2000; Castro, Kluger, & Itzchakov, 2016; Itzchakov, DeMarree, Kluger, & Turjemam-Levi, in press; Itzchakov, Kluger, & Castro, 2017; Pasupathi, 2001; Pasupathi & Rich, 2005; Weeks & Pasupathi, 2011). Therefore, we suggest that conceptual clarity could be gained by considering "active" listening, questions asking, and listening as distinct constructs. First, the construct of *active* listening is often equated with behaviors that are not necessarily productive for relationships. Specifically, active listening became a name for various techniques, such as paraphrasing, that are based on "a distorted, partial interpretation of Rogers' meaning" often used by salesforce and in off-the-shelf training sessions (Tyler, 2011, p. 114). Moreover, marital therapy researchers reported,

surprisingly, that "the active listening model, which is the most common component of current models of marital therapy, occurred infrequently in the resolution of marital conflict and was not predictive of differential marital outcomes" (Gottman, Coan, Carrere, & Swanson, 1998, p. 17). Therefore, we suggest avoiding the term active listening and using other terms based on Rogers's work such as listening for understanding (Castro et al., 2016; Itzchakov & Kluger, 2017; Itzchakov et al., 2017), or supportive listening (Bodie, 2011; McComb & Jablin, 1984; Myers, 2000).

Second, definitions of (perceived) listening tend to converge on three components: attention, comprehension, and relation (or intention). Attention, as a defining feature of listening, is found both in Habermas's (1984) theory of Communicative Action, as well as in various experimental studies in social psychology manipulating listening by contrasting attention with distraction (Bavelas et al., 2000; Itzchakov et al., 2017; Pasupathi & Rich, 2005). Understanding—a cognitive aspect of listening—is prominent in Rogers's writing about good listening being "listening with understanding" (e.g., Rogers & Roethlisberger, 1991/1952), and the cognitive aspect of understanding is featured prominently in many theoretical definitions of listening (e.g., Burleson, 2011; Imhof, 2010). Finally, "the relationship aspect of listening … includes treating the speaker with acceptance, empathy, and non-judgment (Rogers, 1951)" (Castro et al., 2016, p. 762). In light of this view of the listening construct, it is apparent that question asking may or may not lead a speaker to perceive that one is being listened to. That is, question asking that is not followed by attention, comprehension, and supportiveness may not lead to a perception of listening. People may ask question and fail to pay attention to the answer, or "ask questions to avoid disclosing information themselves" (Huang et al., 2017, p. 2). Indeed, question asking is a component in a theory of respectful inquiry (Van Quaquebeke & Felps, 2016), where respectful inquiry is composed of three different behaviors: question asking, question openness, and attentive listening. This theory about respectful inquiry can help to explain both the weak results in the first two studies of Huang et al. (2017) and the SRM results we obtained that contradict their conclusions. Asking questions per se, including follow up questions, does not necessarily signal question openness let alone attentive listening following the question. Thus, separating question asking from listening, rather than equating the two seems more consistent both with an existing theory (Van Quaquebeke & Felps, 2016) and with the data presented by Huang et al. (2017).

Our account is consistent empirically with a SRM study of listening using a round-robin design (Kluger et al., 2018, January) that found non-significant *positive* generalized reciprocities and some significant *positive* dyadic reciprocities. That is, people who listen well tend to have partners who listen well back to them. In contrast, our current SRM analyses of question asking revealed consistently *negative* generalized reciprocities, and some *negative* dyadic reciprocities. That is, people who ask many questions tend to have partners that do not. Albeit, this comparison should be taken with the caveat that in speed dating, as the one analyzed here, meeting with a partner is fixed in time (four minutes in the data analyzed here), where the time constraint induces negative reciprocities. Nevertheless, both theory and data hint that questions asking and listening should not be considered as indicators of the same construct.

Importantly, despite our criticism of the conclusions Huang et al. (2017) reached regarding their speed-dating data, we agree with them that understanding question-asking behavior is important, and understudied. Moreover, their distinction between follow-up and switch question may be relevant in non-speed dating contexts, and may be further moderated by the emotional state of the speaker (e.g., switch questions may help a depressed person revaluate one's condition). We believe that progress regarding questions asking may be achieved by considering the potential of the question to expand the self of the speaker (Reis, de Jong, Lee, O'Keefe, & Peters, 2016). Examples of such questions may be found both in motivational interviewing (Miller & Rose, 2009) and in methods to generate closeness (Aron, Melinat, Aron, Vallone, & Bator, 1997).

Conclusion

Huang et al. (2017) claimed to have identified "a robust and consistent relationship between question-asking and liking" (p. 1), to have demonstrated that question asking is largely a trait, and that "question-asking is a critical component of active listening." (p. 14). We agree that understanding the role of question asking and its consequences is needed to advance understanding of both communication and relationship formation. Yet, in this commentary, we have shown that taking into account theoretical and methodological considerations lead to different conclusions. Theoretically, we showed that question asking may not necessarily be followed by listening (Van Quaquebeke & Felps, 2016), and hence should not be equated with listening. Methodologically, we have shown that by applying SRM tailored to speed-dating data from an asymmetric block design, leads to the conclusion that question asking is not only a trait related to the tendency to ask many or few questions, but also a trait related to eliciting questions, and a dyadic phenomenon as well. Finally, SRM revealed that, in the context of speed dating, those who ask many questions, at least men, may be penalized by being offered fewer second dates, contradicting the Huang et al. (2017) title "It Doesn't Hurt to Ask."

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Appendix

Table A1

Likelihood (Logistic Multi−Level Modeling) of Receiving a Second Date Offer, Controlling for all SRM Components (Table 6), by Gender, Follow-up Questions, and Switch Questions.

Predictor	Estimate	*SE*	*p*
Number-of-questions model			
Intercept	−0.25	0.15	.097
MF v. FM	0.45	0.19	.017
Follow-up questions (A)	0.00	0.05	.974
Switch questions (B)	0.07	0.08	.402
MF v. FM x A	0.01	0.05	.831
MF v. FM x B	0.12	0.08	.142
Questions-rate-per-turn model			
Intercept	−0.26	0.15	.083
MF v. FM	0.46	0.19	.015
Follow-up questions (A)	−1.47	2.15	.494
Switch questions (B)	−2.94	3.45	.393
MF v. FM x A	−0.77	2.14	.719
MF v. FM x B	3.12	3.44	.365

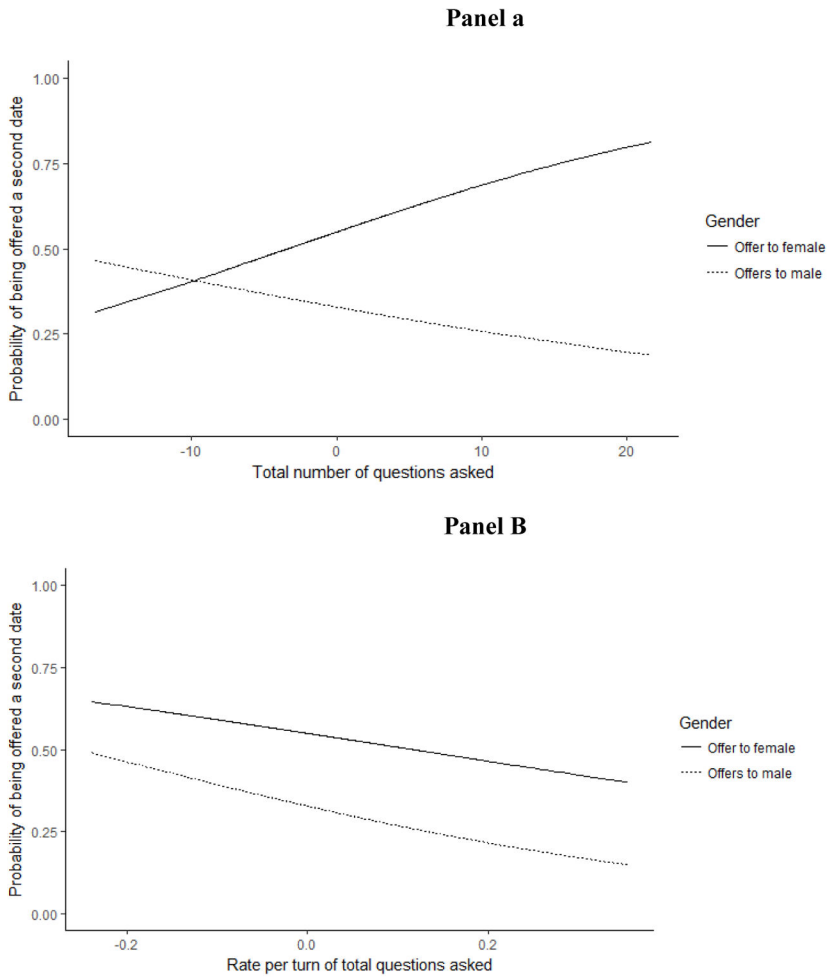

Figure 1.

Probability of being offered a second date by gender and question asking (total) by actor. Panel a presents results for total number of questions asked and Panel b for rate of total questions per turn. Both panels show that as men ask more questions relative to themselves the likelihood that they will receive a second date offer declines. Females who ask more questions relative to themselves the likelihood that they will receive a second date offer increases, but the higher the rate they ask questions the lower the likelihood that they will receive a second date, as for men.

Table 1

Latent Social Relations Modeling of Questions Asking Based on Total Number of Questions and Percent of Conversation Turns Containing Questions.

Gender	Variance component or covariance	Unstandardized estimate[1]	*SE*	*p*	Standardized estimate	Standardized estimate equal-groups subsample[2]
Male						
	Actor variance	0.22	0.05	< .001	.32	.38
	Partner variance	0.12	0.03	< .001	.18	.11
	Relationship variance	0.22	0.01	< .001	.32	.29
	Error variance	0.12			.17	.22
	Actor-Partner covariance	−0.09	0.03	= .001	−.60	−.60
Female						
	Actor variance	0.20	0.05	< .001	.31	.33
	Partner variance	0.10	0.02	< .001	.15	.16
	Relationship variance	0.25	0.01	< .001	.39	.33
	Error variance	0.10			.15	.18
	Actor-Partner covariance	−0.06	0.03	= .04	−.37	−.52
Both						
	Relationship covariance	−0.03	0.01	= .001	−.12	−.15

Note.

[1] Both variables are normalized with a square-root transformation. The variable of percent of conversation turns containing questions was then multiplied by the ratio of means of the transformed variables to obtain similar variances. When this model was run controlling for the three different speed-dating session it failed. Following the recommendations of Ackerman et al. (2015), who noted that when the differences among groups is minimal, we dropped the group variable to obtain convergence.

[2] This analysis did not require normalization nor dropping the group variable to obtain convergence. The variable of percent of conversation turns containing questions was multiplied by 50 to equalize variances of the indicators.

Table 2

Latent Social Relations Modeling of Questions Asking Based on Number of Follow-up Questions and Number of Switch Questions.

Gender	Variance component or covariance	Unstandardized estimate	*SE*	*p*	Standardized estimate	Standardized estimate equal-groups subsample
Male						
	Actor variance	2.23	0.51	< .001	.34	.41
	Partner variance	0.96	0.23	< .001	.15	.11
	Relationship variance	1.91	0.11	< .001	.29	.32
	Error variance	1.48			.22	.16
	Actor-Partner covariance	−0.56	0.21	= .01	−.47	−.70
Female						
	Actor variance	1.48	0.34	< .001	.31	.35
	Partner variance	0.62	0.15	< .001	.13	.14
	Relationship variance	1.64	0.10	< .001	.34	.38
	Error variance	1.07			.22	.14
	Actor-Partner covariance	−0.31	0.20	= .12	−.26	−.48
Both						
	Relationship covariance	−0.05	0.08	= .51	−.03	−.18

Table 3

Latent Social Relations Modeling of Questions Asking Based on Number of Follow-up Questions and Percent of Conversation Turns Containing Follow-up Questions (Multiplied by 50).

Gender	Variance component or covariance	Unstandardized estimate	*SE*	*p*	Standardized estimate	Standardized estimate equal-groups subsample
Male						
	Actor variance	3.50	0.74	< .001	.35	.41
	Partner variance	1.47	0.39	< .001	.15	.11
	Relationship variance	3.32	0.18	< .001	.34	.32
	Error variance	1.58			.16	.16
	Actor-Partner covariance	−1.31	0.34	< .001	−.72	−.70
Female						
	Actor variance	2.46	0.57	< .001	.32	.35
	Partner variance	0.95	0.24	< .001	.12	.14
	Relationship variance	3.21	0.17	< .001	.42	.38
	Error variance	1.02			.13	.14
	Actor-Partner covariance	−0.80	0.35	= .02	−.42	−.48
Both						
	Relationship covariance	−0.64	0.12	< .001	−.20	−.18

Table 4

Latent Social Relations Modeling of Questions Asking Based on Number of Switch Questions and Percent of Conversation Turns Containing Switch Questions (Multiplied by 50).

Gender	Variance component or covariance	Unstandardized estimate	*SE*	*p*	Standardized estimate	Standardized estimate equal-groups subsample[1]
Male						
	Actor variance	1.01	0.22	< .001	.29	.32
	Partner variance	0.58	0.16	< .001	.16	.12
	Relationship variance	1.23	0.07	< .001	.35	.38
	Error variance	0.73			.20	.18
	Actor-Partner covariance	−0.45	0.13	= .001	−.60	−.63
Female						
	Actor variance	0.86	0.20	< .001	.28	.30
	Partner variance	0.55	0.13	< .001	.18	.18
	Relationship variance	1.19	0.06	< .001	.38	.40
	Error variance	0.49			.16	.12
	Actor-Partner covariance	−0.44	0.14	= .002	−.62	−.67
Both						
	Relationship covariance	−0.28	0.05	< .001	−.23	−.23

Note.

[1]The original model did not converge with MLM. Therefore, we multiplied turns containing switch questions by 45 (to match the variances more accurately) and normalized both indicators with square root transformation (A Box-Cox transformation test suggested that a power of −0.46 would best normalize these data, and we used a power of −0.50, a square root transformation, which is pretty close to this value).

Table 5

Covariances between SRM Variance Components for Latent Follow-Up Questions and Latent Switch Questions

Gender	Covariance	Standardized estimate
Male		
	Actor-Actor	.99
	Partner-Partner	1.00
	Actor-Partner	−.61
	Partner-Actor	−.62
	Relationship Intrapersonal	.84
	Relationship Interpersonal	−.20
Female		
	Actor-Actor	1.00
	Partner-Partner	1.00
	Actor-Partner	−.40
	Partner-Actor	−.50
	Relationship Intrapersonal	.78
	Relationship Interpersonal	−.12

Table 6

Social Relations Modeling of Offering a Second Date.

	MLM model in SPSS treating date offer as continuous variable				MLM model in R fitted to binary outcome	
Variance component or covariance	**Unstandardized estimate**	**SE**	**p**	**Standardized estimate**	**Unstandardized estimate**	**Standardized estimate**
Male						
Actor variance	0.062	0.014	< .001	0.25	2.53	.35
Partner variance	0.030	0.008	< .001	0.12	1.30	.18
Relationship + Error variance	0.157	0.008	< .001	0.63	3.29[1]	.46
Actor-Partner covariance	−0.413	0.146	0.005	−0.41		−.39
Female						
Actor variance	0.051	0.012	< .001	0.22	2.49	.36
Partner variance	0.030	0.008	< .001	0.13	1.21	.17
Relationship + Error variance	0.154	0.007	< .001	0.66	3.29[1]	.47
Actor-Partner covariance	−0.374	0.154	0.02	−0.37		−.36
Both						
Relationship covariance	0.074	0.034	0.03	0.07		.06[2]

Note.

[1] The error variance in logistic regression is fixed to $\pi^2/3$. "It assumes the error variance is the same for men and women, and it is not. (The error variance is for those at the intercept which is no one!)" (Kenny, 2017).

[2] We used the residual scores from *glmer* function in *lme4* in R to calculate this correlation. When we dropped participants who offered either no dates or dates to everyone, and those who received no dates, this correlation was .08, $p = .03$ ($n = 676$ dyads).

Table 7

Correlations between Asking Questions and Number of Dates Offers Received.

	Number of dates offered		Number of date offers received	
Predictor	***r***	***p***	***r***	***p***
Actor score (asking questions)				
Female (n = 48)	.22	.13	−.19	.19
Male (n = 48)	.37	.01	−.21	.14
All (n = 96)	.27	.01	−.19	.06
Partner score (eliciting questions)				
Female (n = 48)	−.13	.37	.01	.92
Male (n = 48)	−.34	.02	.19	.20
All (n = 96)	−.21	.04	.09	.35

Table 8

Likelihood (Logistic Multi-Level Modeling) of Receiving a Second Date Offer, Controlling for all SRM Components (Table 6), by Gender and Six Measures of Question Asking.

		Type of measure					
		Number of questions			Questions rate per turn		
Type of question	**Predictor**	**Estimate**	***SE***	***p***	**Estimate**	***SE***	***p***
Follow-up							
	Intercept	−0.21	0.37	.569	0.00	0.40	.999
	MF v. FM	0.51	0.39	.187	0.69	0.42	.100
	Questions per date (A)	0.03	0.03	.363	−2.86	1.49	.054
	Questions per person (B)	−0.01	0.07	.904	−2.36	3.71	.526
	MF v. FM x A	0.07	0.03	.039	0.71	1.49	.634
	MF v. FM x B	−0.01	0.07	.883	−2.08	3.69	.573
Switch							
	Intercept	−0.43	0.43	.316	−0.12	0.50	.811
	MF v. FM	0.54	0.44	.223	0.72	0.51	.158
	Questions per date (A)	0.07	0.05	.204	−4.70	2.38	.049
	Questions per person (B)	0.06	0.12	.645	−1.63	6.57	.804
	MF v. FM x A	0.13	0.05	.012	2.24	2.38	.346
	MF v. FM x B	−0.03	0.12	.800	−3.55	6.51	.585
Total							
	Intercept	−0.33	0.43	.444	−0.08	0.49	.877
	MF v. FM	0.45	0.44	.307	0.65	0.49	.191
	Questions per date (A)	0.01	0.02	.498	−2.28	0.84	.006
	Questions per person (B)	0.01	0.04	.862	−0.78	2.09	.708
	MF v. FM x A	0.05	0.02	.010	0.59	0.84	.479
	MF v. FM x B	0.00	0.04	.999	−0.81	2.07	.696

Note. MF = male being offered by female; FM = female being offered by male. Question per date is actor score centered on actor mean.