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# Judging romantic interest of others from thin slices is a cross-cultural ability

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**Abstract**

The ability to judge the romantic interest between others is an important aspect of mate choice for species living in social groups. Research has previously shown that humans can do this quickly—observers watching short clips of speed-dating videos can accurately predict the outcomes. Here we extend this work to show that observers from widely varying cultures can judge these same videos with roughly equal accuracy. Participants in the USA, China, and Germany perform similarly not only overall but also at the level of judging individual speed-daters: Some daters are easy to read by observers from all cultures, while others are consistently difficult. These cross-cultural performance similarities provide evidence for an adaptive mechanism useful for mate choice that could be resilient to cultural differences.


*Keywords:* Mate choice; Speed-dating; Cross-cultural; Social perception; Social judgment; Thin slices

## 1. Introduction

The ability to judge romantic interest between others is an important adaptive skill, as it allows us to learn about the structure of our social environment (Pentland, 2007) and the availability and desirability of potential future mates (Simão & Todd, 2002). Research has previously shown that US college students possess this ability (Place, Todd, Penke, & Asendorpf, 2009), by having them watch video clips of German speed-daters and predict whether the daters will indicate romantic interest in each other. But are there cultural differences in this ability? Would Germans judge dating behavior in their own culture more accurately than Americans or Chinese? There is considerable variety in courtship patterns and relationship styles across cultures (Broude, 1983; Hamon & Ingoldsby, 2003; Schmitt et al., 2004) and even in nonverbal flirtatious body motions of Eastern and Western daters (Grammer, Honda, Juette, & Schmitt, 1999). While individuals should be good at judging romantic interest *within* their own culture, this ability might not generalize to judging people from *other* cultures (Henrich, Heine, & Norenzayan, 2010). On the other hand, low-level perceptual and cognitive components necessary for making these judgments have been shown to function cross-culturally, with previous studies among multiple developed countries showing similarities in perceiving facial emotions (Ekman et al., 1987), judging personality in zero-acquaintance situations (Albright et al., 1997), and ranking mate choice preferences (Buss, 1989). An ability to decipher romantic interest even between people from other cultures would be evidence for the display and understanding of a common set of cues indicative of human romantic interest that might be resilient to changeable and possibly transient cultural differences.

To test for the presence of such cues, we added participants from two populations, Germany and China, to the original US sample and had them watch and make predictions about the German speed-daters. We presented

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observers with 10-second video clips from the middle of each speed-date instead of showing them the entire 3-min interaction. Previous work has shown that thin slices of behavior as short as 10 s are long enough to reliably judge not only romantic interest (Place et al., 2009) but also a wide variety of other personality and individual attributes (Ambady & Rosenthal, 1992, 1993). Moreover, the results from the previously gathered US sample showed that these location and length of video clips yielded the highest overall accuracy in observer judgments of interest (Place et al., 2009), and we wanted to focus on the greatest possible readability across cultures. The videos were presented with sound to test whether vocal tone and prosody cues, available to all three observer samples, versus actual content, which only the Germans could understand, made for greater accuracy. Noncontent vocal cues contain information that is useful in determining romantic interest (Kucerova et al., 2011; Madan, Caneel, & Pentland, 2005), such as who is speaking more often and how long the gaps are when speakers alternate. Based on previous results showing an advantage in judging romantic interest if the observers had relationship interest themselves (Place et al., 2009), we also assessed the effect of such experience across cultures on their judgment accuracy. Overall, our main question is whether people across cultures judge romantic interactions from their own and other cultures in similar ways, reaching roughly equal success in deciphering cues of romantic interest between the couples they observe. If so, this would suggest a common adaptive mechanism across multiple cultures.

## 2. Methods

### 2.1. Participants

We studied three independent samples of observers. The first was the original sample of 54 non-German-speaking US college students (mean age=19.7, S.D.=2.8, described in Place et al., 2009). In this sample, there were 29 men, of whom 15 were single, and 25 women, of whom 16 were single. The second sample was 70 non-German-speaking Chinese college students (mean age=19.9, S.D.=1.3), made up of 35 men (21 single) and 35 women (26 single). The third sample was a German-speaking general population sample from Germany of 69 participants (mean age=25.9, S.D.=2.9). This sample consisted of 30 men (10 single) and 39 women (11 single). All individuals were screened to be heterosexual and gave informed consent before beginning the experiment.

### 2.2. Stimuli

The stimuli in this experiment consisted of videos of speed-dating encounters between singles meeting for the first time who were actively looking for mates in Berlin, Germany. Speed-dating is an effective way for individuals to meet many prospective mates in one evening and has been proven useful in a variety of scientific settings (Finkel & Eastwick, 2008). These videos came from a set of speed-dating sessions run at Humboldt University in the Berlin Speed-Dating Study (Asendorpf, Penke, & Back, 2011). On these speed-dates, individuals met and conversed for approximately 3 min; at the end of each interaction, each dater recorded their romantic interest in their partner (an offer). At the end of the entire session (comprising a dozen or so short speed-dates), mutual offers were calculated, and individuals received further contact information from their dates in cases of mutual interest. Participants received no reward except for the chance to find a real-life romantic partner.

In this experiment, videos of 24 speed-dates of 48 different individuals (thus, each date consisted of a unique man and woman) were used. Each date was recorded with two video cameras each placed over the shoulder of one dater and focused on their seated partner. This camera angle allowed capture of body language, posture, and arm motion as well as potential eye contact and facial emotions. The two camera feeds were then combined (placed side by side) to create one composite video showing the two daters interacting, each seen face-on but slightly angled toward each other. From each original 3-min date, a 10-s clip from the exact middle of the date was extracted and used as the stimulus[1]. Videos contained audio of the conversation, in German.

### 2.3. Procedure

Participants first reported their age, sex, and relationship status (single or in a relationship). They then watched and evaluated videos of speed-dates. Following each clip, observers were asked two binary yes/no questions: “Do you think the man was interested in/attracted to the woman?” and “Do you think the woman was interested in/attracted to the man?” All instructions were translated by native speakers into German and Chinese. Video presentation order was randomized across the 24 trials. The experimental design therefore comprised three between-subject measures (cultural sample, sex of observer, and relationship status of observer) and two dependent measures (perceived male interest and perceived female interest).

## 3. Results

Raw accuracy was calculated by comparing each observer’s judgment of romantic interest to the actual offers

[1] In this paper, we are analyzing only the data from participants watching 10-s clips from the middle of the date to enable the greatest accuracy in observer judgments of romantic interest (Place et al., 2009). These data for the Chinese and German samples were gathered in the same way as the original US sample, interspersed with other video presentation lengths. In total, observers watched 96 videos, with clips of two lengths (10 s and 30 s) from three different time points in the date (beginning, middle, and end). For each interaction, observers saw 10-s clips from all three time points and one 30-s clip from a randomly chosen time point.

made by the daters after each speed-date[2]. Across observers, accuracy ranged from 58% to 64% correct judgments. The raw accuracy data were converted to *z*-scores to take into account the differences in base rates of male and female interest as follows. In the speed-dating interactions we used, men make offers roughly 40% of the time and women roughly 30% of the time, leading to different accuracy rates for guessing using these base ratings [e.g., for guessing men's interest, accuracy would be ≈.40∗.40+(1−.40)∗(1−.40)=.52]. The chance levels corresponding to these base rates for men and women were subtracted from the raw accuracy values of each set of participants, and these differences were divided by the standard deviation of the accuracy distribution within each participant sample to produce the *z*-scores. This allows a fairer comparison between accuracy of judgments of male and female romantic interest.

These *z*-scores were used in a univariate general linear model, with sex of observer (male/female), relationship status of observer (single/in a relationship), and nation of sample (America/China/Germany) as between-subject fixed factors. Accuracy for predicting male interest was considerably above chance and showed no significant differences across the three samples, $F(11,192)=1.25$, $p=.26$, with *z*-scores of .81 (standard error=.12) for the Chinese, .82 (.12) for the US, and 1.12 (.12) for the German sample. Furthermore, there was no effect of sex of observer or relationship status, nor were any interactions significant. For predicting female interest, accuracy was also above chance levels and showed no significant differences across the three cultures, $F(11,192)=1.18$, $p=.30$. *Z*-scores for the samples were 1.05 (S.E.M.=.12) for the Chinese, .93 (.14) for the Americans, and .74 (.12) for the Germans. Furthermore, similar to the prediction of male interest, there were no effects of sex of observer or relationship status of observer, nor were there any significant interactions.

Additionally, we looked for similar abilities to predict romantic interest across cultures by evaluating whether the particular daters who were easy or difficult to read for the original US participants were also easy or difficult for the Chinese and Germans. In the original US sample, there was enormous variation in dater readability, with some daters easy to read by almost everyone (accuracy across all participants >90%) and some daters who were universally difficult to predict (overall accuracy <20%). The accuracy with which each individual speed-dater was judged was very highly correlated across cultures (all $p<.001$; Table 1). These cross-cultural similarities in the ability to read different individuals were uniform across the distribution of daters—accuracies for the easiest-to-read daters were as highly correlated across the participant samples as were the hardest-to-read daters.

One point of note is that the German observer sample is significantly older than the Chinese and American samples.

Table 1
Correlations (*r*) between different samples of observers for predicting romantic interest at the per-dater level

| | Predicting male interest | Predicting female interest |
|---|---|---|
| US/Chinese | .84 | .77 |
| US/German | .83 | .88 |
| Chinese/German | .65 | .75 |

All correlations are significant at $p<.001$.

Thus, their performance in the task relative to the Americans and Chinese could be driven not (just) by cultural differences and an advantage in language comprehension ability but also by greater life experience and probably dating exposure. To test for this, correlations were calculated at the per-observer level that compared the age of each observer to their judgment of both male and female romantic interest. No correlations were significant (all $r<.1$ and $p>.52$), indicating again that age-related experience mattered little in these judgments.

## 4. Discussion

These results demonstrate strong similarities across cultures in the ability to judge romantic interest between others for the intentions of both men and women. Strong correlations across samples at the per-dater level showed that the individuals who were easy or difficult to read by one culture remained so for other cultures. Despite the possibility of combining different sets of cues to reach different judgments, various cultures still seem to end up reaching the same conclusions on romantic interest. What kinds of culture-independent cues could support such common assessments? Grammer et al. (1999) have shown that valuable information about interactions is contained in the global body motion of the individuals involved, an attribute they term *motion energy*. They found that an increase in motion energy covaries with an increase in romantic interest between the participants in an interaction. Because this macrolevel cue is not culturally specific, it could potentially be recognized by individuals from various backgrounds. In line with this, recent behavioral work has shown that US observers of first dates (as used above) can attend to and utilize this motion information when judging romantic interest (Place, 2010). Judgment accuracy was roughly equal for observers who watched unaltered videos of speed-dates and others who watched videos from which most cues beyond global motion were removed (by blurring the videos so that low-level individual cues of facial attractiveness, eye contact, and expressions were obscured and by taking out the audio of the conversations). Whether other potentially informative cues of turn-taking, pausing, and relative amount of time talking could still be determined and used remains to be studied.

The fact that German observers only weakly outperformed the other two, non-German-speaking samples when judging males and fell behind when judging females indicates that understanding the verbal content of the dating

[2] This is partly different from the analysis in Place et al. (2009) using final decisions; thus, our values for the US sample have changed slightly.

conversations was not a major cue used by participants in our study. However, a set of cues that could be used by observers in all cultures is noncontent verbal cues, such as prosody, speaking time, and synchrony between daters. Audio from speed-dates has been analyzed with automated computer algorithms that extract these cues and use them to predict the success of the daters (Madan et al., 2005). While behavioral experiments using human listeners have not been conducted to test if humans can perform similarly to these algorithms, these cues at least have been shown to contain further information about romantic interest that could be used in addition to global body motion.

Another interesting finding in our data is that there were no differences in performance between observers of different sexes, from any of the cultural samples, which mirrors our previous findings on judgments of romantic interest from just US observers (Place et al., 2009). This further supports the idea that it can be adaptive for one to know not only the interest of potential suitors but also that of potential same-sex competitors; in the latter case, knowing who same-sex individuals are attracted to can be useful social information to influence one's own mate choice preferences (Place, Todd, Penke, & Asendorpf, 2010).

One limitation to this study is the use of speed-dating clips only from Germany. Ideally, stimuli would also include videos of Americans and Chinese on speed-dates. This would allow for a fully crossed methodology, with participants from all three cultural samples watching and predicting the outcomes of dates of individuals again from all three cultures. To do so will require running speed-dating sessions in the USA and China following the same methodology as used in our German study (Asendorpf et al., 2011; Back et al., 2011). These results support the idea that the adaptively important ability to judge romantic interest accurately from thin slices of behavior is common across human cultures and that there are particular cues displayed in mate choice that can apparently be perceived and interpreted by a wide cross-section of humanity.

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