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# Competition Breeds Desire

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Desire spurs competition; here we explore whether the converse is also true. In one study, female quartets ( $N=58$ ) completed anagrams, with the winner to receive compact speakers; controls anagrammed without competition. In the other study, female quartets ( $N=74$ ) described their ideal first date to a male judge, who chose the best description; controls read to him others' date descriptions without competition. In both studies, creating competition increased desire and altered how much participants wanted, but not how much they liked, the competed-for thing. Competition may activate a general "wanting system," producing overvaluing in settings from stock markets to partner selection.

Given finite resources, and overlapping tastes, competition for desired objects is inevitable, and more desire will likely lead to greater competition. Less apparent, however, is whether more competition will lead to greater desire. That is, will people's evaluations of objects be enhanced if they are caused to compete for them?

## FINANCIAL COMPETITION

Auctions, which enable the determination of market value for rare and idiosyncratic items, also have the effect of adding competition between interested parties in a way that normal supply-and-demand market pricing does not. Recent examination of auctions suggests that they may change how people regard the bid-for objects. Thaler (1988) referred to this as "the winner's curse": that winning bids often exceed the items' estimated value. There is growing evidence that this is directly due to competition. Controlled studies have shown that increasing competition in auctions leads to higher bids and that auctions with greater competition lead to a greater chance of exceeding preset spending limits (Heyman, Orhun, & Ariely, 2004; Ku, Malhotra, & Murnighan, 2005). Furthermore, auctions with lower starting bids actually have higher ending bids, presumably because this allows for more bidders

to enter, thereby increasing competition (Ku, Galinsky, & Murnighan, 2006).

Auctions, however, vary many factors in addition to competition. The presence of additional bidders, for example, can provide social comparison validation of the value of the item. It is not clear that adding more bidders always adds more competition. In fact, studies have not always manipulated the number of bidders in the same direction. Furthermore, although there is evidence that the number of bidders can influence bid amounts, such findings do not explicitly address whether bidders' appraisals of the item itself have changed. It is possible, for example, as competing and appraising in auctions are intertwined, that bidders are driven by a desire to win the competition rather than a desire to acquire the item. Consistent with this, Malhotra (2010) found that continued bidding on online auctions was mediated by a desire to win rather than changing perceptions of how much the item is worth.

## COMPETITION FOR SOCIAL OBJECTS

Despite the ubiquity of competition, its effects on appraisal have not been explored outside of the financial world. Social interactions may be carried out much like financial ones (Blau, 1964; Kelley & Thibaut, 1978; Thibaut & Kelley, 1959), and, consequently, just as auctions can induce financial overbidding, competitive social interactions may induce a similar "auction fever" that

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affects appraisal of social others. For example, competition for dating partners could lead to inflated perceptions of their value. Reality dating television shows offer plenty of anecdotal evidence of such an effect, but there are implications for much more commonplace settings—such as any corner bar with more suitors than suitees. Given the inherently competitive nature of dating, surprisingly little is known about the effects of competition on dating relationships and attraction. There is some evidence that implicit competition may increase perceptions of attractiveness (Hill & Buss, 2008), but the effect of direct competition on dating behavior and attraction remains unexplored.

### LIKING AND WANTING

In looking at the effects of competition, whether for a social or nonsocial reward, it may be useful to distinguish between two aspects of desire: liking versus wanting, a distinction for which there is a good deal of emerging evidence. Animal models have shown that the value judgments associated with food (its palatability) are governed by different neural mechanisms from those associated with motivation to obtain food (wanting it), and that the two can be manipulated independently (Berridge, 1996). Similar results have been found in humans, showing that palatability and intake of food are not always correlated (see Finlayson & Dalton, 2012; Finlayson, King, & Blundell, 2007, for review). This distinction extends to social stimuli. The perceived attractiveness of a face, for example, does not always relate to the efforts people will exert to view that face (Aharon et al., 2001). Aharon et al. also showed that the function of reward circuits in the brain related to wanting may not include unconscious aesthetic judgments (liking) of social objects. Recently, Dai, Brendl, and Ariely (2010) asked subjects to rate how attractive or pleasant a face was to look at (liking) and to indicate how long they wanted to view it (wanting). For male subjects rating male faces, there was a stark discrepancy between liking and wanting, with men indicating greater liking for attractive male photos but showing no increased motivation to view them.

### CURRENT OBJECTIVES

The current pair of studies had three primary goals. First, we explored the effects of competition on appraisals of the competed-for item in a way not contaminated by the desire to win the contest itself. Second we addressed this question with competition for a nonsocial prize and for a social one. Finally, we explored whether an effect of competition differentially impacts how much

the prize is wanted versus how much it is liked. This is potentially informative, as auction studies, which examined what financial lengths people will go to in order to procure an item, did not assess how much people actually *liked* the items they vied for. To accomplish these aims, we carried out two studies: one measuring liking and wanting for a nonsocial object and one examining social evaluations of a potential dating partner.

The nonsocial study investigated the effects of competition on appraisals of an object. Participants, in groups, either competed against each other or performed the same tasks in a noncompetitive context. We chose this control as it matches on the task and the social setting. It does not match exactly on the attainability of the object, but having subjects, for example, win the object by beating some performance standard could still be considered competition, against a social norm. Having them entered in a lottery would likewise be potentially seen as competitive, albeit a competition based on luck rather than performance. The social study examined the effects of competition on appraisal of a social object—in this case, a potential dating partner. As with the other study, half the groups competed and half did not.

## METHOD

### Nonsocial Study

Fifty-eight female undergraduates ( $M$  age = 20.2) participated in the study in exchange for course credit (two participants did not complete the questionnaires and were excluded). Four participants at a time sat at a table and were each given a word scramble task. The task consisted of four lists of six letters (e.g., S B U E S D), which they were instructed to use to make as many three- to six-letter words as possible in 10 min. They were then shown a Sony Compact and Slim Travel Speaker, a pocket-sized plug-in speaker for MP3 players. Participants in the competitive condition ( $n = 30$ ) were told that we were assessing verbal skills in college students and that whoever created the most words would win the speakers. Those in the control condition ( $n = 28$ ) were told they should generate as many words as possible to help the lab for a future study, after which they would give an evaluation of the travel speaker, putatively to help with future research in the lab. For both groups, the speaker remained on the table in front of them while they generated words.

Groups sat together at the table and spent 10 min writing down their answers for the word scramble task. Afterward, while their words were being tallied, participants were given an evaluation form and asked to rate the speaker on several qualities. The form consisted of

6-point Likert-type scales that asked both how much they liked the item (*extremely dislike* to *extremely like*) and how much they wanted it (*extremely do not want* to *extremely want*).

## SOCIAL STUDY

Seventy-six female participants ( $M$  age = 20.3), in groups of four, participated in exchange for course credit (data from two participants who were homosexual were excluded). After briefly meeting a male confederate, whom they were told was a participant, participants went into a different room and received instructions, which varied by condition. All participants were asked to spend 10 min writing a description of an ideal first date, after which the male participant would reenter the room. They would then read an ideal date description aloud to him. Participants in the competitive condition ( $n = 37$ ) were told they would read their own paragraphs to him and that he would judge their descriptions to decide, based on the paragraphs, which girl would be best to go on a date with. Those in the control condition ( $n = 37$ ) were told that, to minimize the threat of evaluation or implied competition, they would not read their own descriptions but instead would read an anonymous paragraph written by a participant in a previous session. These participants were told that the male participant would simply take notes. All participants were then given 10 min to write their paragraphs. Those in the control condition gave theirs to the experimenter, who then gave them a paragraph written in a previous session. The male confederate then reentered the room, and all participants read a paragraph to him. This procedure was designed to maximize similarity, other than competition, between conditions and standardized the activity and degree of contact with the male confederate.

After the paragraphs were read, the confederate left and participants were given an evaluation form made up of 6-point Likert-type scales. Wanting has typically been measured by examining behavior rather than appraisal, as behavior is more indicative of motivation. In appetite studies, wanting was measured by examining consumption, whereas liking was measured by measuring hedonic response (Finlayson & Dalton, 2012; Finlayson et al., 2007). Facial-processing studies operationalized these variables in similar ways, with wanting being indicated by behaviors that showed a desire to interact with the stimulus (in this case, a sort of visual consumption; Aharon et al., 2001; Dai et al., 2010). Like in the Dai et al. (2010) study, “wanting” in the current study was measured by participants’ motivation to interact with the confederate. Because he was specifically introduced as a potential dating partner, wanting in this case was measured by asking about dating behavior: “Hypothetically, if the male participant

asked you on a date (and you were single), would you accept?” Liking, on the other hand, is measured as a value judgment of the person. In the Dai et al. study, participants rated how likable or attractive the face was to look at. In the current study, because the confederate was being evaluated specifically as a potential dating partner, liking was captured by asking, “Do you feel the male participant would be a good person to go on a date with?” There are, of course, other appraisals one can make of a potential dating partner under the larger umbrella of whether he or she would be a good person to go on a date with. To investigate more specific elements of liking, we also included similar Likert-type scales asking whether they felt he was attractive, intelligent, and funny. All of these questions were rated from 1 (*definitely not*) to 6 (*definitely*).

Participants rated how they thought other women in general would rate the confederate on the same liking and wanting scales in order to explore the possible role of social comparison. The confederate remained blind to condition and study hypotheses and did not interact with the participants. He was told simply to look at his clipboard and take notes.

## RESULTS

### Nonsocial Study

To determine the effect of competition on appraisals of liking and wanting, we analyzed the data with appraisal type as a within-subjects variable and condition as a between-subjects variable. This revealed an interaction of condition and appraisal type, indicating that competition had different effects on liking and wanting ( $d = 0.817$ ; Figure 1).<sup>1</sup> Planned comparisons showed a small difference between the competitive and control conditions in participants’ ratings of liking the speakers ( $M = 4.14, 4.40, SD = .85, .67$ , respectively;  $d = 0.336$ ). However, there was a large difference in how much participants wanted the speakers, with those in the competitive condition wanting them more than those in the control condition ( $M = 4.13, 3.18, SD = 1.14, 1.16$ , respectively;  $d = 0.833$ ).

### Social Study

To test whether competition had an effect on liking and wanting, we again analyzed the data with appraisal

<sup>1</sup>In keeping with the journal’s policy, we eschew null hypothesis testing, relying instead on effect size estimates to convey the importance of our findings (Trafimow, 2014). For those reassured by conventional, albeit far from perfect, null hypothesis significance testing, we can report here that all moderate and larger effects discussed are associated with a  $p < .05$ .

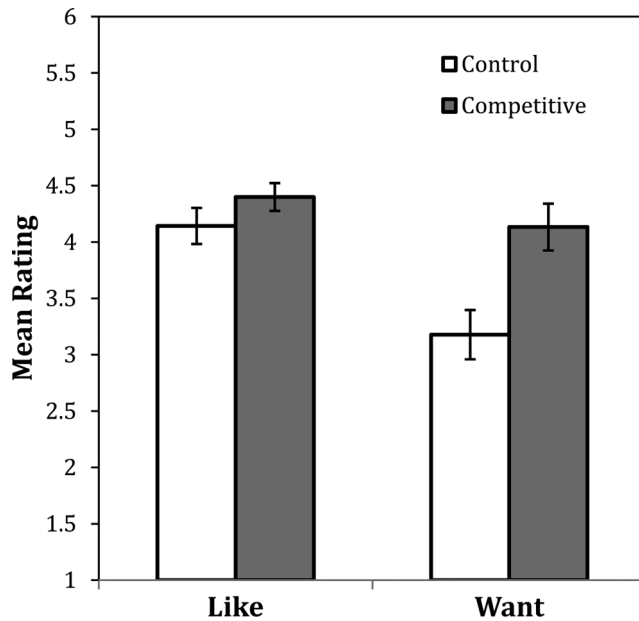


FIGURE 1 Effects of competition on liking and wanting the audio speakers. *Note.* Mean ratings on a scale of 1–6, with one standard error.

type as a within-subjects variable and condition as a between-subjects variable. This revealed an interaction of condition and appraisal type, indicating that competition affected liking and wanting differently ( $d = 0.523$ ; Figure 2).

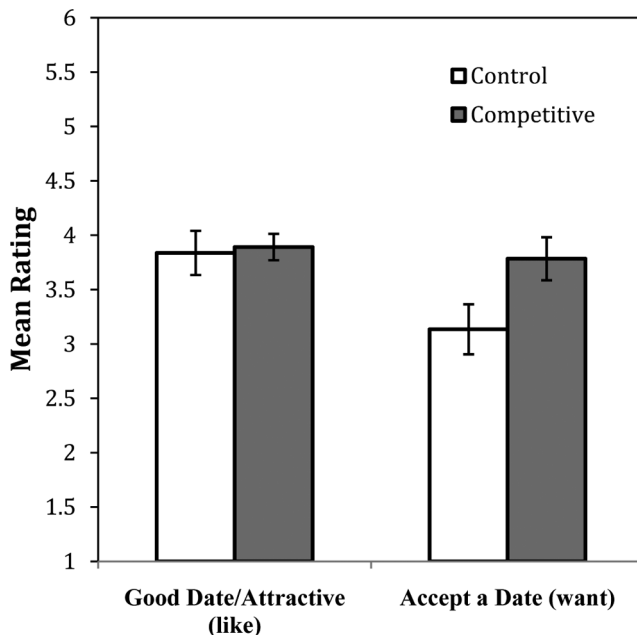


FIGURE 2 Effects of competition on liking and wanting a potential dating partner. *Note.* Mean ratings on a scale of 1–6, with one standard error.

As with the nonsocial study, planned comparisons showed negligible difference between the competitive and control conditions in liking ( $M = 3.84, 3.89$ ,  $SD = 1.24, .74$ , respectively;  $d = 0.054$ ). However, as in the nonsocial study, there was a larger difference in ratings of wanting. Participants in the competitive group indicated they would be significantly more likely to accept a date invitation from the confederate, compared to those in the control condition, ( $M = 3.78, 3.14$ ,  $SD = 1.20, 1.40$ , respectively;  $d = 0.498$ ).

We also examined the other variables pertinent to liking, specifically participants' ratings of the confederate's attractiveness, intelligence, and sense of humor. Again, these showed only small differences between conditions ( $d = 0.351, 0.230, 0.256$ , respectively). The effects of competition were confined to the measure of wanting.

#### ALTERNATE EXPLANATIONS AND POTENTIAL MECHANISMS

Although there are several alternative explanations for each of the findings, none satisfactorily accounts for the results from both studies. It could be, for example, that “wanting” meant something fundamentally different to those competing for the speakers in the nonsocial study because they actually had the chance of acquiring them. This does not apply, however, to the social study, as participants in this study were never led to believe they would actually win something. The date invitation was equally hypothetical in the two conditions.

It is also possible that the manipulations influenced the amount of effort participants exerted in the tasks, thereby increasing ratings of wanting as justification for that effort. There was, however, no suggestion that competitive participants in either study exerted more effort. Control subjects in the nonsocial study differed only slightly in the amount of effort they reported devoting to the task ( $d = 0.281$ ) and in the number of words they generated competing for the speakers ( $d = 0.134$ ). Control subjects in the social study indicated that they did not exert much less effort in writing their paragraphs than competitors ( $d = 0.314$ ) and wrote paragraphs of approximately equal length as competitors ( $d = 0.023$ ).

Although these data do suggest that effort, and effort justification, do not explain the effects of competition, it is still possible that some difference in the emotional state created by the two conditions could underlie the results. Subjects in the social study did have to read aloud their own date description, and this could have created stress that lead to wanting, or lead to desire for compensation for their trouble. This seems a less compelling explanation for the nonsocial study, where the task, and the measured task engagement, differed only very slightly. Further studies, nonetheless, could

explore this with measures of stress and other affective states, which could be examined as possible mediators of competition's effect.

It is also possible that the effects are due to social influence—that is, participants saw other women competing, and thereby assumed that the prize was generally desirable. Although this could be a legitimate mechanism by which competition exerts some influence, there is reason to think it is not entirely responsible for our findings. In our studies, the competition was assigned, and so does not logically signal the general desirability of the prize, although there could still be an impact of social influence regardless. Competitive and control participants in the social study, however, differed little in their predictions of how other women in general would respond to a date invitation from the confederate ( $d=0.070$ ). They also differed only very slightly in their predictions of how attractive other women in general would find the confederate ( $d=0.230$ ). This suggests that increases in wanting were not based on inferences that other women also wanted him more or would find him more attractive.

Our data cannot rule out all alternate accounts. It is possible that participants, when they were in the condition where they could possibly go home with the prize, thought of it as the kind of thing that could be wanted, whereas the noncompeting controls did not, and this impacted their ratings. Although this could apply to the portable speaker, it seems less likely to explain the purely hypothetical ratings of the desirability of a date with the confederate, with whom nobody thought she was going to go home. It is also not clear why such a mechanism would not also impact ratings of liking. However, the idea could be tested with control groups that also had the option of obtaining the object, and potentially with ratings of other objects, if in fact competition activates a general wanting system that is not specific to the target of the competition.

## DISCUSSION

These two studies show that competition can increase desire for an object, and can do so even when the competition and evaluation are separated into distinct processes, expanding upon auction findings. This both speaks to the strength of the influence of competition and extends the applicability of these findings outside the realm of auctions, into the competitive world in general.

The results also underscore the difference between liking and wanting, and that even in social behaviors they can be impacted independently. This is consistent with studies showing that the two are mediated by distinct neural systems (Aharon et al., 2001; Berridge, 1996, 2000; Berridge & Robinson, 1998; Berridge,

Robinson, & Aldridge, 2009; Berridge & Valenstein, 1991). Activation of the neural regions associated with wanting and reward anticipation, particularly mesolimbic dopamine systems in the nucleus accumbens, has been linked to a variety of reward-driven behaviors in humans. Activation of these neural regions, for example, has been found to precede risky, irrational financial behavior similar to overbidding (Coates & Herbert, 2008; Kuhnen & Knutson, 2005). Participants also make risky financial decisions when anticipating rewards in nonfinancial domains (Knutson, Wimmer, Kuhnen, & Winkielman, 2008) suggesting a general “wanting system” is activated without being tied to specific stimuli. Further supporting the neurobiologically distinct basis of wanting, dopaminergic and opioid genetic markers have been found to indicate binge eating disorder, an acute sensitivity to the hedonic properties of food, among obese adults (Davis et al., 2009). It is possible that, as the candy aisle of a grocery store can lead to a sudden craving for chocolate, competition can signal the presence of reward and consequently activate an anticipatory wanting system, leading to irrational behavior such as overbidding—or accepting a date invitation from someone you do not find especially funny, attractive, or intelligent.

This distinction between liking and wanting may be partially responsible for the disappointment many auction winners report feeling with their prizes once the auction ends. Known as “the winner's curse,” this is most commonly associated with winners who pay more than the objective value of a prize but also describes dissatisfaction with prizes with ambiguous values (Bazerman & Samuelson, 1983). Our results indicate that one possible explanation for this disappointment, in addition to the explanations offered by economic models (Capen, Clapp, & Campbell, 1971; Thaler, 1992), is that participants increase their effort and investment in procuring an item they greatly *want* but do not necessarily greatly *like*.

The traditional economic examination of auctions assumes rationality both in the auction design and on the part of the bidders. However, processes other than rational economic calculations can clearly operate when competition is involved. That social competition thwarts the rational model is supported also by studies showing that bidders fit a rational model when bidding against a computer but not when competing against humans (Delgado, Schotter, Ozbay, & Phelps, 2008; Van den Bos et al., 2008). Just as hunger signals that food is necessary, regardless of whether it is liked, competition in primitive times could have signaled that essentials such as food or mates were scarce and should be fought for, regardless of liking. It is possible that this irrational overbidding in modern competitive auctions is the natural result of pairing what was a primitive cue to basic survival with the current acquisition of antiques and autographs.

A limitation to the generalizability of our results is that only female individuals participated in the studies. Research has shown that competition can affect men and women differently in many areas including attraction (Hill & Buss, 2008). Thus replicating the studies with men, especially the social study, could be valuable. Also, the “objects” competed for in our studies (the male participant and the speakers) were generally desirable to begin with. It is unclear whether competition could actually push someone to want something they did not want in the first place, or whether it merely enhances their initial inclinations.

Competition enhancing desire for such things as speakers and dating partners could have potentially far-reaching effects, influencing what we aim to acquire and, when we find we do not much like the things that we have wanted, generating postpurchase dissatisfaction or postmarital disharmony.

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