

Research Report

Preference Invites Categorization

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ABSTRACT—*Past research indicates that positive affect (relative to neutral or negative affect) reduces processing and makes categorization less differentiated. The present experiment demonstrated that preference, even though affectively pleasant, invites finer categorization. Expertise is already known to influence categorization; hence, the present experiment used an associative conditioning task (novel symbols paired with positively or negatively valenced photographs) to create new preferences, thereby demonstrating that preference influences categorization independently of preexisting expertise. These findings cast new light on established theory of affect and cognitive processing and suggest new implications for consumer preference and goal pursuit.*

What are the cognitive consequences of preference? We suggest that categorical differentiation is one important consequence, such that differentiation mirrors the degree of enjoyment produced by the objects categorized. To appreciate wine is to apprehend innumerable varieties of grape, texture, and taste; to enjoy baseball is to split hairs over particular teams, players, and managers; and to cherish a loved one is to relish the fine nuances of his or her personality. By contrast, the rejected and forsaken are construed on a relatively surface level. If one dislikes fish, opera, or hockey, far simpler categorical distinctions suffice. This research thus introduces a new higher order determinant of categorization (preference), which also clarifies current theoretical ideas regarding the impact of affect on cognitive processing.

Preference may be defined as the favorable, even pleasurable, evaluation of an object or activity, varying in intensity from mild to passionate (Belk, Ger, & Askegaard, 2003; Zajonc, 1980). The law of effect, which states that rewarded behaviors tend to be repeated, indirectly suggests that preference invites finer categorization (Thorndike, 1898). That is, because preferences are pleasurable, they invite repeated exposure (Hoch & Deighton, 1989), which in turn provides repeated opportunity to

note detail and store it in memory. At the same time, repeated exposure may in and of itself increase liking (i.e., the mere exposure effect; Bornstein, 1989); hence, both causal directions are likely at play (liking increases time spent with an object, and more time spent with an object increases liking). Moreover, because preferences are inherently interesting, they evoke cognitive engagement. People frequently contemplate, consider, and elaborate on objects and activities that are liked, which in turn forms the basis of categorical differentiation.

That preference invites categorization may, however, be at odds with research showing that positive affect promotes heuristic and global processing more than neutral or negative affect does (Gasper & Clore, 2002), as evidenced in a variety of areas: elaboration of persuasive messages (Schwarz, Bless, & Bohner, 1991), use of individuating information in stereotyping (Bodenhausen, 1993), accuracy of person perception (Sinclair & Mark, 1992), and categorization (Isen & Daubman, 1984). One reason offered to explain this pattern is that affect yields information (Schwarz, 1990), such that negative affect signals the presence of a problem (and thus initiates systematic processing aimed at fixing the problem), whereas positive affect signals safety or an absence of problems (thus obviating the need for further processing). If engaging in a preferred activity is pleasurable (i.e., it brings positive affect), then according to this view, preference ought to be associated with less (and not more) categorical differentiation. Furthermore, an absence of problems may afford the luxury of more daring, unusual, or creative strategies of cognitive processing (Carver, 2003). Thus, recent research indicates that positive affect evokes heuristic and global processing, suggesting that preference should involve broader rather than finer categorization.

A key methodological element of past research on affect and cognitive processing is that the source of the affect is distinct from the target judgment task. That is, affect is typically manipulated with a procedure (e.g., remembering past events, watching a brief video) that is entirely different from the focal judgment task (e.g., recreating a picture, forming an impression), that is used to indicate the degree of processing. Theoretically, this procedure underscores the role of misattribution (Schwarz & Clore, 1983). That is, when the source of positive affect is ambiguous or unknown, then it may be misattributed to a subsequent judgment task, which in turn mediates shifts in

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processing (Gasper & Clore, 2002). When affect can be attributed directly to its source, such processing effects are attenuated (Albarracín & Kumkale, 2003). Under these circumstances, affect can be interpreted as intrinsic interest or enjoyment in the task, which can influence both qualitative and quantitative task-performance measures (Hirt, Melton, McDonald, & Harackiewicz, 1996). However, because nearly all prior research on affect and cognitive processing has employed manipulations of task-unrelated affect, this literature has remained relatively silent on the effects of task-related affect in general and of preference in particular. In other words, past research shows that if people are placed in a happy mood by watching a funny video clip and are then asked to perform a second unrelated, affectively neutral task, they will complete that second task in a heuristic manner. But if those same participants instead completed a task centering on the funny video clip itself, we suspect that they might well do so with vigorous, systematic processing. In testing the impact of preference (which, by definition, involves task-related affect) on categorization, the present research explores previously uncharted territory that may reorient current theory on affect and cognitive processing.

In addition, task-related and task-unrelated affect differ in terms of approach motivation (i.e., the desire to move toward the attractive object), which may also influence processing strategies. Low approach-motivating positive affect (e.g., task-unrelated affect) connotes a sense of safety, which broadens attentional focus (Carver, 2003). In contrast, high approach-motivating positive affect (e.g., task-related affect) urges us to draw nearer to the attractive object: Attention narrows in on the details of the attractive object to better attain the desired outcome. Recent research has found that high approach-motivating positive affect decreased sensitivity to global features of a stimulus (e.g., seeing the trees, not the forest; Gable & Harmon-Jones, 2008). We suggest that preference is another example of positive affect that is high in approach motivation, thus suggesting a further reason why preference may involve finer, rather than broader, categorization.

Preference is an example of a broad, top-down determinant of categorization. Another such top-down determinant is expertise (i.e., domain-specific knowledge). Past research shows that expertise influences categorization, evoking more nuanced and differentiated categorical constructions that are divided along core concepts rather than surface descriptors (Medin, Lynch, Coley, & Atran, 1997; Rota & Zellner, 2007). For example, when categorizing physics word problems, Ph.D.-level physicists (experts) were more likely to rely on theoretical principles of mechanics than were undergraduate students (novices; Chi, Feltovitch, & Glaser, 1981). Further, as consumers develop expertise with products (from computers to energy drinks), they develop more sophisticated vocabularies that mirror finer categorical differentiation and schematic complexity (Cowley & Mitchell, 2003). It seems straightforward that increased

exposure (e.g., sampling many wines, attending many baseball games) prompts the development of expertise, which in turn brings finer categorization. We propose, however, that preference invites categorization independently of variation in pre-existing expertise, such that mere liking of an object or activity directly evokes finer categorical differentiation. To test this hypothesis, the present experiment involved the creation of new preferences via associative conditioning. On a between-subjects basis, initially neutral symbols were repeatedly paired with pleasant or unpleasant images, after which participants sorted the symbols into unique categories.

METHOD

Forty-seven undergraduates were randomly assigned to positive or negative preference conditions.

The preference manipulation was an affect-based associative conditioning task consisting of eight blocks of 30 trials each. For each trial, a neutral symbol was paired with a positive, neutral, or negative image (i.e., an image depicting a pleasant or unpleasant scene). In the positive preference condition, participants saw (in each block) 20 neutral symbols paired with 20 different positive images. Each block in the positive preference condition also included 10 other neutral symbols paired with either neutral or negative images. In the negative preference condition, participants saw (in each block) the same 20 neutral symbols paired with 20 different negative images. Each block in the negative preference condition also included 10 other neutral symbols paired with either neutral or positive images. In each trial, the judgment task was to judge how well the symbol captured the tone expressed in the image. Target symbols were identical for both positive and negative conditions and were used in the subsequent categorization task.

The symbols were intended to be affectively neutral by virtue of their unfamiliarity. We used ancient hieroglyphics and hobo symbols, obtained from an Internet source (www.symbols.net; see Fig. 1 for examples). The photographic images were taken from the International Affective Picture System (Lang, Bradley, & Cuthbert, 1997). The images were selected so that the positive and negative image sets differed in valence ($M_s = 7.54$ vs. 2.29 , $SE = 0.13$ vs. 0.14), $F(1, 18) = 752.6$, $p < .001$, $d = 12.27$, but were similar when rated on dimensions such as extremity, arousal, dominance, and ambivalence (all $F_s < 1$; as per raw data reported in Ito, Cacioppo, & Lang, 1998). Next, participants completed a categorization task in which they sorted a deck of 20 cards (each depicting 1 of the 20 target symbols) into meaningful categories. Instructions specified that a category could contain any number of symbols and that sorting should reflect the presumed meaning conveyed by the symbols, as opposed to their mere physical characteristics. Participants provided labels for each of their categories.

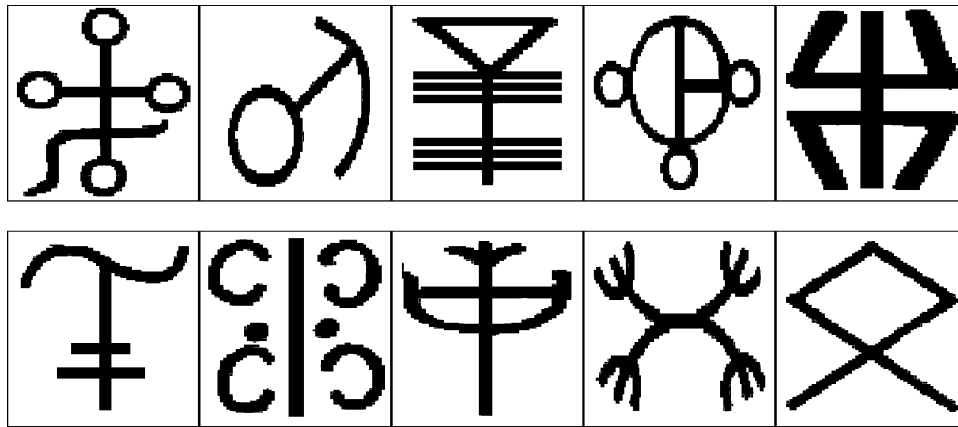


Fig. 1. Examples of the symbols used in the associative conditioning and categorization tasks.

RESULTS

Pretest

A pilot study confirmed the conditioning task's effectiveness in manipulating preference ($N = 38$). Participants in the positive-conditioning group rated target symbols more favorably than did participants in the negative-conditioning group ($M_s = 4.49$ vs. 3.70 , $SE = 0.10$ vs. 0.12), $F(1, 36) = 24.22$, $p < .001$, $d = 1.60$. The pilot study also ruled out alternative interpretations involving memory, confidence, and mood. The experimental conditions did not differ in memory for the stimuli, as indexed by recall of symbol-image pairs ($M_s = 73\%$ vs. 74% , $SE = 0.02$ vs. 0.03 ; $p = .75$, $d = 0.11$) and discriminability ($A' = .82$ vs. $.83$; $p = .91$, $d = 0.06$); they did not differ in confidence ($M_s = 3.38$ vs. 3.56 , $SE = 0.09$ vs. 0.10 ; $p = .18$, $d = 0.45$); and they did not differ in mood (measured via the Positive and Negative Affect Schedule, or PANAS; Watson, Clark, & Tellegen, 1988; $M_s = 2.38$ vs. 2.40 , $SE = 0.17$ vs. 0.15 ; $p = .93$, $d = 0.03$).

Main Experiment

Preference influenced categorization. Participants in the positive-conditioning group sorted the symbols into finer categories than did participants in the negative-conditioning group ($M_s = 6.13$ vs. 5.17), $SE = 0.44$ vs. 0.25 , $F(1, 45) = 3.72$, $p = .06$, $d = 0.56$. In labeling their categories, participants relied mainly on valenced adjectives (87% of all labels; e.g., *inspiring*, *ominous*).

DISCUSSION

Wine connoisseurs love to split hairs, intensely reviewing the particulars of grape, vineyard, and vintage. Baseball fans love to split hairs, arguing over minutiae of performance, management, and statistics. Movie aficionados split hairs, comparing specifics of plot, acting, and cinematography. What these sorts of people all have in common is that they love the hairs they are splitting. Categorical differentiation mirrors the enjoyment produced by the objects within that category.

We demonstrated that preference evokes finer categorical differentiation, even when those preferences are created in the laboratory. This is particularly compelling in light of demonstrations of the influence of expertise on categorization (e.g., Medin et al., 1997; Rota & Zellner, 2007). Accordingly, preference may influence categorization as mediated by expertise. More time spent in the enjoyable pursuit of wine tasting surely nurtures expertise, which in turn awakens recognition of the finer subdivisions among varietals. The present experiment demonstrated, however, that preference in and of itself can drive further categorization, because enjoyment activates focused thinking that directly targets the enjoyed object. That preference influences categorization is an important new finding, in that relatively few higher order determinants of categorization have been articulated. Expertise is one such determinant; preference, we have now shown, is another.

Our findings seem to contradict, at first glance, previous research showing that positive affect promotes more global and heuristic processing (e.g., Gasper & Clore, 2002). However, nearly all past research has manipulated affect within an experimental task that is entirely different from the judgment task that is used to measure processing effects. That is, past research has manipulated task-unrelated affect, but it has not examined the impact of task-related affect. Our study fills this gap in the literature and indicates that focusing on preferences (which by definition involve enjoyment and pleasure) results in finer categorization.

That preference invites categorization suggests new ways of interpreting established effects in social psychology. For example, the out-group homogeneity effect involves the perception of greater category differentiation for in-groups than out-groups (e.g., "they are all the same"; Mullen & Hu, 1989). The traditional interpretation is that perceptions of out-group homogeneity contribute to prejudice, in-group favoritism, and out-group hostility (i.e., weaker category differentiation confers disliking; Mummendey & Wenzel, 1999). Our research suggests that the reverse causal direction is also possible—that liking a group

may drive greater category differentiation than would disliking a group. Our findings are also relevant for consumer psychology, particularly in terms of variety seeking (i.e., the pursuit of new kinds of experiences or products related to an earlier enjoyable experience; Goukens, Dewitte, Pandelaere, & Warlop, 2007). Variety seeking results in greater perceived distinctiveness of products, particularly in terms of brand recognition (Kahn & Isen, 1993). We suggest that the categorical differentiation initiated by preference is the first step along the way to variety seeking and that generating an ever-more nuanced conceptual framework within a passionate pursuit lends coherence and understanding. In other research, Redden (2008) demonstrated the effect of categorization on preference, which is the reverse of the effect that we have shown. That is, although consumers may become satiated with a given product, they may prolong consumption if the product is recategorized more finely. Thus, the relation between preference and categorization is particularly important for understanding consumer behavior.

Seeking out preferred objects may be construed as goal pursuit, and thus the present findings are relevant to research on goal pursuit and automatic evaluation. This research has shown that goal-relevant objects are automatically evaluated more positively than are goal-irrelevant objects (Ferguson & Bargh, 2004). A more positive evaluation leads to both stronger approach tendencies and behavioral intentions, which in turn facilitate goal-consistent behavior (Duckworth, Bargh, Garcia, & Chaiken, 2003; Ferguson & Bargh, 2004). In terms of categorization, as these factors increase, more opportunities are provided to further differentiate and learn details of the preferred category. In future situations, this increased differentiation may mean that more objects can be seen as being goal relevant, thereby broadening the scope of goal-directed behavior. We hope that future research tests these intriguing possibilities.

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