RUNNING HEAD: BEING WHAT YOU SAY

Being what you say: The effect of essentialist linguistic labels on preferences

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Abstract

Three experiments examined the effects of essentialist linguistic labels on perceptions of preferences of others and of the self. In Experiment 1, participants evaluated the preferences of others described with noun labels (e.g., "Susan is a chocolate-eater") as stronger, more stable, and more resilient than those described with descriptive action verbs ("Susan eats chocolate a lot"). Experiments 2 and 3 revealed the analogous effect for self-perception: participants evaluated their own preferences that they had described with nouns (rather than verbs) as stronger, more stable, and more resilient. These results indicate that the very manner in which attitudes are expressed can affect their status and evaluation. Linguistic forms that imply essentialist properties (e.g., nouns) can engender the inference that such attitudes are dispositional and therefore strong and stable. More generally, these results show that attitudes are plastic constructions shaped by subtle but pervasive cognitive and social input from the environment.

BEING WHAT YOU SAY: THE EFFECT OF ESSENTIALIST LINGUISTIC LABELS ON PREFERENCES

It is said that we treat our attitudes and beliefs as if they were valued possessions (Abelson, 1986): as important social markers of who we are and what we value. As such, attitudes and beliefs have been regarded as relatively stable representations that one can easily access through conscious thought (see Smith, 1996; Smith & DeCoster, 1998 for a description of this view). Yet the view that attitudes are stable is not always supported by the evidence (Bem & McConnell, 1970; Goethals & Reckman, 1973; Gross & Ellsworth, 2003). Indeed, the context in which an attitude or preference is elicited can shape its manifestation, sometimes in quite dramatic ways (e.g., Schwarz & Clore, 1984; Tversky & Kahneman, 1981). It now appears that even relatively automatic attitudes toward social groups reveal shifts in strength and even valence depending on the circumstances under which they are assessed (Blair, Ma, & Lenton, 2001; Dasgupta & Greenwald, 2001; Lowery, Hardin, & Sinclair 2001; Mitchell, Nosek, & Banaji, 2003; see Blair, 2002 for a review). This research portrays attitudes not as stable representations recalled at will but as temporary constructions whose manifestation is influenced by a wide variety of cognitive and social factors (Banaji & Prentice, 1994; DeSteno & Salovey, 1997; Mitchell, Nosek, & Banaji, 2003; Schwarz, 2000).

The goal of the present research is to test this idea by focusing on one aspect of the cognitive and social context: the language we use to express our attitudes. We argue in the spirit of self-perception theory (Bem, 1967) and research on the effects of context on cognition (Schwarz, 2000; Tversky & Kahneman, 1981) that the form in which an attitude is expressed generates information about the strength of that attitude, and that speakers use this information in subsequent evaluations. Our manipulation features an experience ubiquitous in everyday social

life—the verbal rendition of one's attitude. Built into the "saying" of the attitude is a miniscule variation of grammatical form. If such a minor manipulation can influence the perceived strength, stability, and resilience of the attitude, it would suggest quite starkly that attitudes are creatures of the moment—that they are plastic and shaped by small yet systematic variations in the manner in which they are expressed.

This test was informed by a growing body of evidence on the influence of variation in linguistic form on evaluative content (see Brown & Fish, 1983; Semin & De Poot, 1997). For example, abstract linguistic forms convey relatively essentialist information: characteristics of people described abstractly are seen as more stable over time, as less verifiable, as more informative about targets, and as less informative about the situation targets are in (Semin & Fiedler, 1988; see also Maass, Salvi, Arcuri, & Semin, 1989). People thus view characteristics described using nouns (a relatively abstract linguistic form; e.g., "John is an intellectual") as stronger, more enduring, and more central to the target's identity than characteristics described using adjectives (e.g., "John is intellectual"; Markman & Smith, described in Markman, 1989; see also Gelman & Heyman, 1999; Gentner, 1978, 1982). Descriptions formulated using nouns seem to characterize who a person is, not just what he or she feels or does in a particular situation. In *Beyond the Fringe,* Jonathan Miller humorously illustrates this essentialist property of nouns in signaling the strength of group identity when he says: "I'm not really a Jew. Just Jew-ish. Not the whole hog, you know."

This and related research on language and cognition demonstrates that language may affect perceptions of the physical world, of other individuals, and of social groups (Gerrig & Banaji, 1994; Hardin & Banaji, 1993; Hunt & Agnoli, 1991; Lucy, 1992). For example, Semin and De Poot (1997) showed that simple changes in wording like "She danced with him" or "He

danced with her" might affect assessments of responsibility in a rape case. Such research emphasizes the role of linguistic cues in assessments of others. It may be argued that such changes are relatively easy to produce because, in experimental settings, little is typically known about the person being evaluated. If minimal linguistic cues also affect judgments of well-known targets, it would carry far more implications for our understanding of attitudes. We provide such a test by studying self-appraisals: the effect that variation in grammatical form has on assessments of one's own seemingly well-known preferences.

The idea that language might influence self-perceived attitudes diverges radically from the traditional perspective on attitudes. From the traditional view, self-perception is fundamentally different from all other social perception. We evaluate our own attitudes by introspectively accessing a rich and elaborate network of internalized knowledge—our personal thoughts, feelings, and memories. We evaluate the attitudes of others, in contrast, by inferring their feelings from indirect cues—for example, how passionately they proclaim or how consistently they act on their attitudes. One such cue may well be the manner in which the views of others are described, and this cue may guide inferences about their attitudes even as our assessments of our own attitudes are unaffected by such a subtle source of information. Whether a person is described as a "feminist" or as "a strong supporter of women's rights" may produce different assessments of their attitude but such variation in our descriptions of ourselves may not influence self-assessments. From this perspective, we know what we like and how much we like it.

The proposal that attitudes about oneself are subject to linguistic influence is much more plausible if attitudes are viewed as temporary constructions shaped by the context in which they are elicited rather than as stable internal representations accessed at will (Smith, 1996). From

this perspective, the linguistic form that is used to describe one's attitude can influence how that attitude is constructed bottom-up. Some linguistic forms, we argue, suggest greater strength and stability than others, and inducing such a form should lead to the perception that the attitude is relatively strong.

This idea finds some support in research on the effects of language and culture on the self. Among those who are bilingual and bicultural, different languages appear to provide access to distinct, culturally-specific selves (Ross, Xun, & Wilson, 2002; see also A. Fiske, Kitayama, Markus, & Nisbett, 1998). In this research, bilingual Chinese-Canadians exhibited East Asian thought patterns when completing experimental materials in Chinese (e.g., more agreement with Chinese cultural norms), but Western thought patterns when completing the same materials in English (e.g., more favorable than unfavorable self-statements, higher self-esteem). One language, it appears, may spontaneously activate particular ideas or thoughts more readily than another. But, for our purpose of examining the construction of attitudes from subtle linguistic cues, research comparing different languages is problematic because it confounds linguistic self-perception processes with cultural associations. The stronger test is to study a single language within which the grammatical form of preference expression is systematically varied.

In conducting these studies, we adapted a procedure from an important demonstration by Gelman and Heyman (1999) of social perception among children. These researchers showed that 5- and 7-year-old children infer that a peer has stronger and more stable preferences (e.g., for carrots) if those preferences are described using abstract noun labels ("Rose is a carrot-eater") instead of descriptive action verbs ("Rose eats carrots whenever she can"). This finding is consistent with the idea that characteristics of people described abstractly are perceived as relatively stable and enduring aspects of their personality (Semin & Fiedler, 1988).

Experiment 1: Linguistic Labels and Social Perception

Experiment 1 was designed to test the idea that variation in linguistic form can influence the perceived strength of others' preferences. We assess whether the findings of Gelman and Heyman (1999) among children extend to adults.

Method

Design. In a within-subjects design, participants evaluated the preferences of eleven individuals toward one of eleven topics, either five or six of which had been described using noun labels and five or six of which had been described using descriptive action verbs.

Participants. 88 individuals, eighteen and older, on the campus of Yale University participated in Experiment 1 for a *Snapple* or candy bar. Eight participants were excluded because they reported having participated in similar research in the past, and three were excluded because they did not follow the instructions. Thus the final sample included 77 participants.

Procedure. Participants were invited to take part in a five-minute study on "social perception." They responded to eleven fictitious target individuals whose preference for one of eleven topics had been described by completing three seven-point scales assessing the *strength* ("How strong is X's preference for Y"), *stability* ("How likely is it that X's preference for Y will remain the same in the next five years?"), and *resilience* ("How likely is it that X's preference for Y would remain the same if he/she was surrounded by friends who did not enjoy Y?") of each target's preference (adapted from Gelman & Heyman, 1999). The first scale was anchored by "Very Weak" (1) and "Very Strong" (7); the second and third by "Very Likely to Change" (1) and "Very Likely to Remain the Same" (7). The scale labeling was identical in each condition. These measures were designed to index the extent to which people viewed preferences as

concrete or as abstract (see Semin & Fielder, 1988): preferences viewed abstractly were predicted to be evaluated as relatively strong, stable, and resilient.

Manipulation of Noun/Verb Framing. The manipulation was accomplished by subtly modifying the one sentence description of each target's preference to feature either a noun label or a descriptive action verb. For example, some participants read, "Jennifer is a classical music-listener" while others read, "Jennifer listens to classical music a lot." The complete list of noun and verb forms is contained in Table 1.

Three criteria were balanced in constructing noun/verb pairs for the studies reported here (see Tables 1, 2, and 3). First, as much as possible, the same root word was used in both forms. For example, "Sam is a Shakespeare-reader" was paired with "Sam reads Shakespeare a lot." Second, as much as possible, statements that are used in natural spoken conversation were used. Sentences like "Beth is a baseball-watcher" were thus avoided in favor of "Beth is a baseball fan." Finally, for some topics it was not obvious *a priori* whether the verb form should refer to the frequency of a behavior or to its evaluation. Thus this feature of verb forms was allowed to vary across topics. For example, we used both "David eats Pepe's pizza a lot" (paired with "David is a Pepe's pizza-eater") and "Ben enjoys dogs a lot" (paired with "Ben is a dog person").

Order of Topics and Noun/Verb Phrasing. Twenty-two versions of the questionnaire were constructed to vary the order in which preference topics were presented. Each preference topic occupied each of the eleven placements twice, once in its noun form and once in its verb form. Each preference topic was thus presented in its noun form in half of the questionnaires and in its verb form in the remaining half of the questionnaires. Noun and verb forms alternated within each version of the questionnaire. To avoid confounding the language manipulation with the gender of the target, the gender of targets alternated by twos (i.e., "Sam," "John,"

"Jennifer," "Beth," "Bill," "David"…). This approach also varied the association between preference topics and the gender of targets.

Results and Discussion

Data Treatment. We combined data to create an overall measure of participants' evaluation of preferences described using nouns and an overall measure of participants' evaluation of preferences described using verbs. Data were first combined across preference topics by averaging ratings made within each outcome measure (strength, stability, and resilience) and within each condition (noun and verb). This created six variables indexing the perceived strength, stability, and resilience of topics presented in noun and in verb form. Because the three measures for noun phrases and the three measures for verb phrases each formed a reliable index (Cronbach's $\geq .81$, n's = 77), each was averaged into an overall composite variable, one assessing participants' evaluation of preferences described using nouns and one assessing participants' evaluation of preferences described using verbs.

Noun/Verb Effects. We tested the effect of noun/verb descriptions by conducting a paired-samples t-test on the overall composite variables. As predicted, participants evaluated preferences described using nouns ($M = 5.08$) more highly than preferences described using verbs ($M = 4.75$), $t(76) = 4.09$, $p < .0001$, $d = .47$.

We then conducted three follow-up analyses comparing the noun composite for each individual outcome measure with its verb counterpart to ensure that each was in the predicted direction. Each was: preferences described using noun labels were rated as stronger ($M = 5.51$) than preferences described using verbs ($M = 5.26$), $t(76) = 3.22$, $p = .002$, $d = .37$, as more stable (noun: $M = 5.20$; verb: $M = 4.76$), $t(76) = 4.72$, $p < .0001$, $d = .54$, and as more resilient (noun: $M = 4.53$; verb: $M = 4.24$), $t(76) = 2.31$, $p = .023$, $d = .26$.[1] The finding is simple and clear: the use

of noun labels rather than verbs in the description of others' attitudes leads to greater perceived strength and stability of the attitude. This effect was obtained with adults and was consistent across all three dependent measures.

Forming accurate impressions of others is an important objective in social life, and these data suggest that person perception is a finely tuned process sensitive even to subtle linguistic sources of information. Moreover, person perception operates in a lawful manner: here, weighing subtle changes in grammar as a marker of essentialism to assess what may be inherent or symptomatic of the person (noun version) or less so (verb version).

This finding, however, is a conceptual replication with adults of previous work showing the same pattern with children (Gelman & Heyman, 1999). The new question concerns whether similarly minor variations in language that tap essentialist attributes would also affect assessments of the self. We addressed this issue in Experiments 2 and 3.

Experiment 2: Linguistic Labels and Self-Perception

The opportunity to directly access a rich network of internalized self-knowledge may make variation in linguistic form irrelevant to assessments of one's own preferences. We know what we like, and miniscule variations in parts of speech should not derail access to such knowledge. Unless, of course, attitudes are constructed in part on a momentary basis from contextual cues rather than merely deriving from stable internal representations. If even one's own attitudes are subject to subtle linguistic influence, it would suggest that familiar, well-worn attitudes and preferences vary with contextually provided input and do not originate in more stable and permanent stores of knowledge.

Experiment 2 was designed to test whether speakers employ cues embedded in their own speech to evaluate their attitudes. Participants completed blanks in two types of self-descriptive

sentences. Some sentences featured a noun label designed to portray a preference as a central aspect of one's identity (e.g., " I am a *baseball* fan") while others featured a descriptive action verb designed to minimize this importance (e.g., " I watch *baseball* a lot"). We tested whether participants evaluated their own preferences as stronger, more stable, and more resilient after using noun label descriptions than after using descriptive action verb descriptions.

Method

Design. In a within-subjects design, participants evaluated their preferences toward three attitude objects they had described with noun labels and three attitude objects they had described with descriptive action verbs.

Participants. 208 Yale undergraduates enrolled in an introductory psychology course participated for course credit.

Procedure. Participants completed study materials in the context of a larger packet of unrelated questionnaires administered during a large pre-testing session. They indicated their preference for each of six topics by completing a blank in each of six sentences. For each sentence, participants were provided with examples of words they could use to indicate their preference. They were told, "Feel free to choose from among the suggestions listed in parentheses, or choose something else more appropriate for you." After completing each sentence, participants used three seven-point scales to assess preference *strength* ("How strong is your preference for this topic?"), *stability* ("How likely is it that your preference for this topic will remain the same in the next five years?"), and *resilience* ("How likely is it that your preference for this topic would remain the same if you were surrounded by friends who did not enjoy what you prefer?") anchored in the same manner as Study 1. The scale labeling was identical in each condition.

Manipulation of Noun/Verb Framing. The manipulation was accomplished by subtly modifying each sentence participants completed to feature either a noun label or a descriptive action verb (see Table 2). For participants, the manipulation thus consisted in the experience of completing one or the other type of sentence in expressing their attitudes.

Order of Topics and Noun/Verb Phrasing. Sixteen versions of the questionnaire were constructed to vary the order in which preference topics were presented. Each preference topic was presented in its noun form and in its verb form in half the questionnaires. For half the questionnaires the first three preference topics were presented in the noun form and the second three were presented in the verb form; for the other half of questionnaires this order was reversed.

Results and Discussion

Data Treatment. As in Experiment 1, we combined data to create overall measures of participants' evaluation of preferences described using nouns and of preferences described using verbs. Data were first combined across preference topics by averaging ratings made within each outcome measure (strength, stability, and resilience) and within each condition (noun and verb). This created six variables indexing the perceived strength, stability, and resilience of topics presented in noun and in verb form. Because the three measures for noun phrases and the three measures for verb phrases each formed a reliable index (Cronbach's $\geq .77$, $n = 206$), each was averaged into an overall composite variable, one assessing participants' evaluation of preferences described using nouns and one assessing participants' evaluation of preferences described using verbs.

Noun/Verb Effects. We tested the effect of noun/verb descriptions by conducting a paired-samples t-test on the overall composite variables. As predicted, participants evaluated

preferences they had described using nouns ($M = 5.04$) more highly than preferences they had described using verbs ($M = 4.85$), $t(207) = 2.20$, $p = .029$, $d = .15$. This analysis provides the primary support in Experiment 2 for our central hypothesis.

We then conducted three follow-up analyses comparing the noun composite for each individual outcome measure with its verb counterpart to ensure that each was in the predicted direction. Each was: preferences described using noun labels were rated as marginally stronger ($M = 5.00$) than preferences described using verbs ($M = 4.84$), $t(207) = 1.70$, $p = .090$, $d = .12$, as marginally more stable (noun: $M = 5.22$; verb: $M = 5.06$), $t(205) = 1.66$, $p = .098$, $d = .12$, and as significantly more resilient (noun: $M = 4.90$; verb: $M = 4.67$), $t(206) = 2.22$, $p = .027$, $d = .15$.[2]

We conducted an ANOVA involving order (between subjects) and evaluations of noun and verb phrased topics (within subjects) to assess whether order moderated the main effect of linguistic form and found that it did not, $F < 1$. The main effect of linguistic form obtained both when noun-phrased topics preceded verb-phrased topics and when they did not.[3]

The results of Experiment 2 demonstrate that linguistic form can influence a speaker's own attitudes, including its perceived strength, stability, and resilience. Perhaps not surprisingly, the effect here, while significant, is not as large as that obtained for social perception in Experiment 1. Experiment 3 was therefore designed to replicate this finding and ascertain its generality. Additionally, Experiment 2 left open an alternative explanation for the obtained effect. Rather than influencing participants' construal of their preferences, it is possible that the manipulation in Experiment 2 influenced the specific choice of targets participants selected in constructing preferences. For example, rather than construing their preference for a given dessert (e.g., chocolate) more highly in the noun condition than in the verb condition,

participants may have selected desserts they preferred more highly in the noun condition than in the verb condition.

Experiment 3: The Handwriting Study

Experiment 3 differed from Experiment 2 in several ways. First, in Experiment 3 participants selected the targets of their preferences before receiving the experimental manipulation to rule out the possibility of selection effects in choice of targets. If the effect from Experiment 2 is replicated, it could be attributed with greater confidence to the construal of preference targets and not to their selection. Second, we disguised the study as an investigation of handwriting styles and asked participants to rewrite each sentence describing each preference three times. Third, we used an expanded set of preference topics including five new preferences in combination with three used in Experiment 2. Finally, because the venue of the study made participants available for only a brief time, we chose to measure only the strength of their preferences. We selected this dependent variable because, as Experiment 2 showed the strongest effect on resilience, we wanted to focus on an outcome that appeared less sensitive to the manipulation.

Method

Design. In a within-subjects design, participants evaluated their preferences toward four attitude objects they had described with noun labels and four attitude objects they had described with descriptive action verbs.

Participants. 199 people on the campus of Yale University participated in Experiment 3 in exchange for a *Snapple* or candy bar. 18 participants who had participated in similar research in the past (e.g., in Experiment 2) were excluded. Thus the final sample included 181 participants.

Procedure. Participants were invited to complete a five-minute study on "different styles of handwriting." Each participant was told that he or she had been randomly assigned to participate in his or her "natural handwriting style." Participants then specified their target objects for eight preferences by responding to eight questions constructed in the verb forms contained in Table 2 (e.g., "What is a kind of movie that you watch a lot?"). As in Experiment 2, participants were provided with examples of words they could use to indicate their preference for each topic. Subsequently, participants used the preferences they had specified to complete the blank in each of eight sentences. After completing each sentence, participants rewrote that sentence three times (in their "natural handwriting style") and evaluated the strength of that preference with the same measure used in Experiment 2. Finally, to test whether the manipulation of noun/verb phrasing was subtle enough to go unnoticed, participants were questioned as to what they thought the study was about and whether they were suspicious of any aspect.

Manipulation of Noun/Verb Framing. The manipulation was accomplished by subtly modifying each sentence participants completed and rewrote to feature either a noun label or a descriptive action verb (see Table 3).

Order of Topics and Noun/Verb Phrasing. As in Experiment 2, we constructed sixteen different versions of the questionnaire to vary the order in which topics were presented and whether each topic was presented in its noun or verb form. Each preference topic was presented in its noun and verb form in half the questionnaires. Unlike Experiment 2 we did not cluster noun and verb forms separately but alternated them in each version. Thus in half the versions the first item was noun-phrased, the second verb-phrased and so on; in the other half this order was reversed.

Results

Data Treatment. Participants' ratings of the topics they completed in noun and in verb form were combined to calculate the mean preference strength for preferences described using nouns and for preferences described using verbs.

Noun/Verb Effects. We tested the significance of the effect using a paired-samples t-test. Replicating Experiment 2, participants evaluated preferences they had described using nouns as stronger ($M = 5.39$) than preferences they had described using verbs ($M = 5.24$), $t(180) = 2.57$, $p = .011$, $d = .19$.[4] The consistency of the results and the differences in magnitude of the effects across the three experiments are summarized in Figure 1.

Subtlety of Noun/Verb Phrasing. When the 181 participants were probed for hypotheses about the study just four (2%) made any mention of language (e.g., thinking the study investigated "wording"); 125 participants (69%), by contrast, reported the belief that the study investigated preference judgments and/or handwriting.

The results of Experiment 3 converge well with those of Experiment 2. The main effect was replicated using a conceptually similar procedure. Furthermore, the results of Experiment 3 cannot be attributed to the selection of attitude objects.

General Discussion

We began with the idea that people infer the strength and subjective structure of their attitudes in part from the nature of their own descriptions of them. We found that when people described their preferences using abstract noun labels—which imply that a preference is central to one's identity—they judged those preferences as stronger and more stable than when they described them using descriptive action verbs. Just as people use grammatical cues to infer the

attitudes of others (e.g., Gelman & Heyman, 1999; Markman, 1989; Maass et al., 1989; Semin & Fielder, 1988), they use such cues to infer their own attitudes.

These results add to the growing evidence that attitudes are pliable and plastic rather than stable and rigid. A subtle change in the grammatical form of self-descriptions—an experience pervasive in everyday social life—can influence attitudes, and does so despite the rich array of information based on experience that underlies preferences. Far from stable possessions, these data portray attitudes as malleable constructions subject even to minor variations in the form in which they are elicited (see DeSteno & Salovey, 1997; Schwarz, 2000).

Our results specifically emphasize one way in which language affects attitudes: when people characterize a preference with a relatively abstract noun label (instead of a descriptive action verb), they mark that preference as an essential aspect of their identity. Essentialism implies that a characteristic is inherent in the person (self or other) rather than the product of circumstance; that it is biological rather than social in origin; stable rather than unstable; and capable of great explanatory power rather than little (Gelman & Heyman, 1999). As Gelman and Heyman write, "language may help turn an arbitrary characteristic into a trait." Viewing oneself through an essentialist lens—as governed by certain stable personality traits or central characteristics—may have a range of behavioral consequences. For example, a student who categorizes herself as "a bad student" (rather than as having "done poorly") may view her intellectual capability as fixed. She may respond to academic failure by withdrawing effort, a response that may facilitate subsequent failures that further foster the image of oneself as "a bad student" (see Dweck, 1999). Essentialist language and thought may similarly inhibit change or personal development in other domains (e.g., weight, athleticism, etc.).

Mediation

Abstractness of linguistic form may influence self-perceived attitudes in at least two ways. Thus far we have advocated a self-perception process in which people (mis)attribute their use of essentialist linguistic formulations to the centrality of the relevant preference to their identity. A second mechanism is also possible in which the use of more or less abstract linguistic formulations influences the nature of attitude-relevant information available to people as they evaluate their attitudes. The use of abstract linguistic formulations may, for example, make perceptions and memories that are consistent with strong versions of one's attitudes more available (see Hardin & Banaji, 1993) or increase the likelihood that people will make schema-consistent inferences (see Hoffman, Lau, & Johnson, 1986). These processes are likely to be complementary rather than antagonistic and may operate separately or in tandem to produce the observed effects.[5]

Moderation

Previous research on the effect of noun labels on social perception indicates that even novel noun labels—linguistic constructions absent or rare in everyday speech (e.g., "creature-believer")—lead to stronger inferences about the preferences of others than do verb-based statements (Gelman & Heyman, 1999). This research suggests that we associate not just well-known cultural labels (e.g., "dog person") with essentialism, but also the very abstract grammatical structure of noun labels (see Semin & Fiedler, 1988). We conducted two post-hoc analyses, first to assess whether our data on social perception replicate this finding, and second to assess whether the same pattern would hold for self-perception.

After coding the noun labels used in each experiment as common or as novel (see Tables 1-3),[6] an internal analysis of the data from Experiment 1 (perceptions of others' preferences)

revealed that both common and novel noun labels elicited significantly higher ratings than their verb counterparts, $t(77) = 2.52$, $p = .014$, $t(77) = 3.10$, $p = .003$, respectively, and that the size of the two effects ($d = .32$ and .41, respectively) did not differ significantly, $t < 1$. This finding is consistent with that of Gelman and Heyman, and indicates that people perceive essentialism in the grammatical form of noun labels, not just in the content of established labels.

We examined the same question for self-perception in a meta-analysis combining data from Experiments 2 and 3 and correcting for small sample sizes (Hedges & Olkin, 1985). This analysis revealed that commonly used noun labels elicited significantly stronger inferences than their verb counterparts $d = .20$, $z = 2.78$, $p = .005$, but that novel noun labels did not, $d = .07$, $z = .91$, *ns*.

The discrepancy between these patterns for social and self-perception is striking. Although any interpretation of this post-hoc data is speculative, one explanation seems promising. Because of their rarity, novel noun label may be especially salient, and people may be most apt to notice how these phrases represent their attitudes. For people whose attitudes are weak, or who have self-presentational motives to portray those attitudes as weak, the sense that one has overstated one's attitude may evoke reactance leading people to downplay their attitudes on subsequent rating scales obscuring linguistic effects among participants with moderate or strong attitudes. By contrast, reactance is unlikely to occur when people construe the attitudes of others, because they are neither knowledgeable about those attitudes nor invested in their representation. This explanation would predict that weakly held attitudes would be evaluated more negatively following the use of novel (but not common) noun phrases while moderately or strongly held attitudes would be evaluated more positively following the use of both novel and

common noun phrases. Unfortunately, we did not identify which attitudes were strongly and weakly held prior to the manipulation, and as such we cannot evaluate this prediction here.

Implications for Understanding the Nature of the Self

These results imply that language may be an important vehicle through which we create and maintain our sense of self: who we are, what our attitudes are, and perhaps even who we would like to be (see Mullen & Yi, 1995; see also Cialdini et al., 1976). People may habitually describe themselves in ways that are consistent with their self-views. In turn, such self-descriptions may perpetuate the view that gave rise to their description, and thus facilitate a self-fulfilling cycle of self-views and self-descriptions (for analogous processes involving social perception, see Hoffman et al., 1986; Maass et al., 1989; for memory, see Semin & Smith, 1999). This process may contribute both to heterogeneity among individuals within linguistic groups and to heterogeneity in the selves typical of different linguistic communities. For example, English features a decontextualized "*I*" that emphasizes a self that is independent and agentic while Japanese minimizes the use of the first person pronoun and de-emphasizes the individual agent (see Markus, Mullully, & Kitayama, 1997). These linguistic differences may result from characteristic cultural differences between Western and Eastern conceptions of the self, and they may also contribute to these differences.

Implications for Language and Cognition

Our results are also relevant to the fifty-year old debate that language affects thought. Although Whorf's (1956) radical original claim that language *determines* thought is no longer accepted (Bloom & Keil, 2001), research continues to suggest that the grammatical form of language can influence cognition, including spatial cognition (e.g., Levinson, 1996) temporal cognition (Boroditsky, 2001), social cognition (Hoffman et al., 1986), and perception and

memory of objects (Boroditsky, Schmidt, & Phillips, in press; for a review also see Hardin & Banaji, 1993).

Our results suggest that grammatical form may, in and of itself, influence the strength and quality of attitudes. However, because our interest lay elsewhere—in how small a linguistic variation could shift preferences—we paired noun and verb forms that differed in more than their mere grammatical form (e.g., we paired "I am a chocolate-eater" with "I eat chocolate *a lot*"; see Gelman & Heyman, 1999). As a result, these data should not be taken to speak to the issue of the effects of language on thought in the traditional sense. Future research specifically designed to investigate the effect of grammar on cognition should investigate whether noun and verb forms that differ in only their grammatical form (e.g., "I am a chocolate-eater" and "I eat chocolate") also elicit different attitudinal evaluations.

Extensions

Future research may extend the present work by assessing whether speakers are also responsive to other linguistic forms that communicate essentialist implications, such as adjectives and metaphors. Also, one might assess whether linguistic abstraction leads to greater engagement in attitude-consistent behavior, or if it influences *objective*, as well as subjective, attitude structure (e.g., would people be less susceptible to counter-attitudinal persuasion after stating their attitudes abstractly?, see Eagly & Chaiken, 1998). Finally, research can further evaluate the proposal that self-perception processes underlie the observed effects. If so, linguistic form should primarily affect attitudes that people cannot readily evaluate from internal cues. As Bem writes, self-perception effects are most common when "internal cues are weak, ambiguous, or uninterpretable" (Bem, 1972; see also Chaiken & Baldwin, 1981). Attitudes that are not confidently held or whose assessment is debilitated by cognitive demands should thus be

especially susceptible to linguistic influence. Alternately, researchers could manipulate participants' perception that their statements are or are not freely chosen: only when statements seem freely chosen should self-perception effects occur.

The ability to communicate effectively depends on the cooperation of speakers and listeners in the communication process (Clark, 1996). When people describe themselves to others, they endeavor to characterize themselves accurately, and listeners interpret their descriptions as reflecting their self-image. The present research suggests that, in addition, coordinated communication occurs because speakers come to be who they say they are.

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Table 1

Topics and Noun and Verb Constructions, Experiment 1

Preference	Noun Form	Verb Form
Author	X is a Shakespeare-reader.	X reads Shakespeare a lot.
Beverage*	X is a coffee-drinker.	X drinks coffee a lot.
Dessert	X is a chocolate-eater.	X eats chocolate a lot.
Mac/PC	X is a PC-person.	X uses PCs a lot.
Movie	X is an Austin Powers buff.	X watches Austin Powers a lot.
Music	X is a classical music-listener.	X listens to classical music a lot.
Outdoors	X is an indoors person.	X spends a lot of time indoors.
Pet*	X is a dog person.	X enjoys dogs a lot.
Pizza	X is a Pepe's pizza-eater.	X eats Pepe's pizza a lot.
Sleeping Time*	X is a night person.	X stays up late.
Sports*	X is a baseball fan.	X watches baseball a lot.

Note. *Noun phrase coded as commonly used.

Table 2

Topics and Noun and Verb Constructions, Experiment 2

Preference	Noun Form	Verb Form
Dessert*	I am a ___ lover. (chocolate…)	I eat ___ a lot. (chocolate…)
Mac/PC*	I am a___ -person. (Mac/PC)	I use___ a lot. (Mac/PC)
Movie	I am a ___ buff. (Austin Powers…)	I watch ___ a lot. (Austin Powers…)
Outdoors*	I am an ___ person. (outdoors/indoors)	I spend a lot of time ___. (outdoors/indoors)
Sleeping Time*	I am a ___ person. (night/morning)	I ___ .(stay up late/get up early)
Sports*	I am a ___ fan. (basketball…)	I watch ___ a lot. (basketball…)

Note. *Noun phrase coded as commonly used.

Table 3

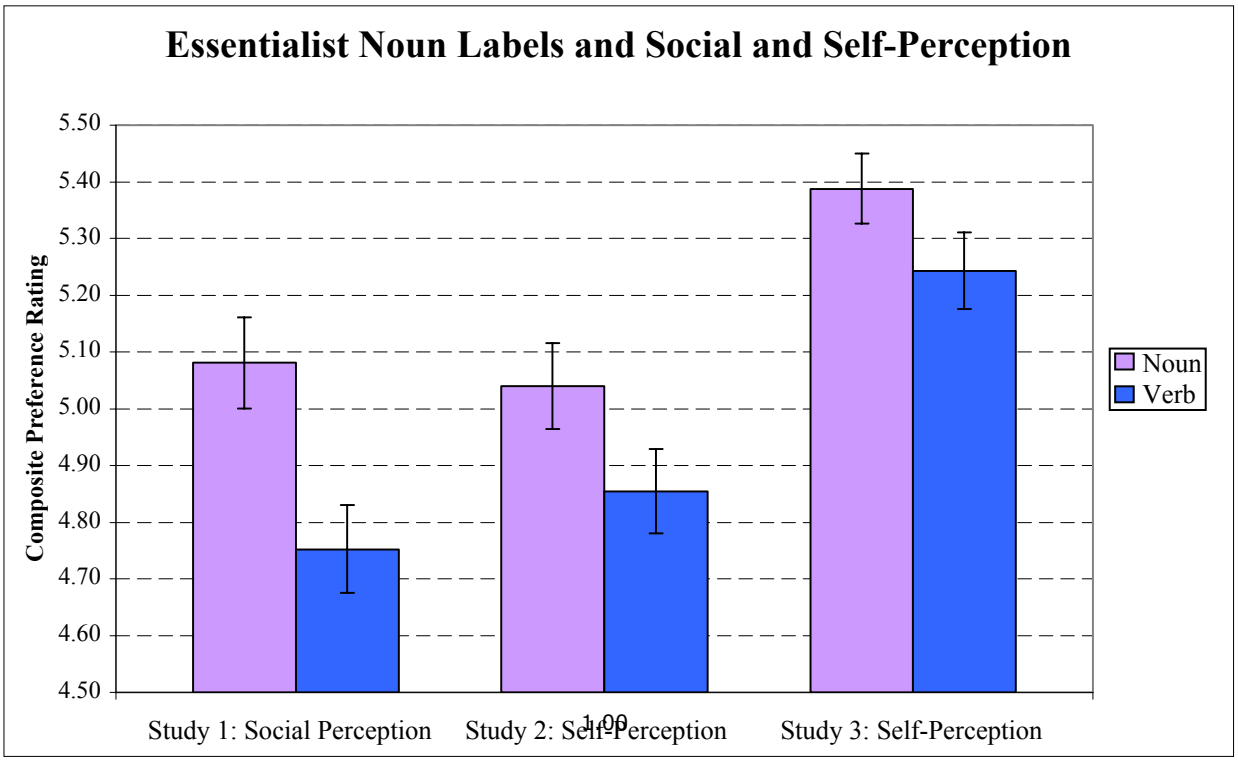
Topics and Noun and Verb Constructions, Experiment 3

Preference	Noun Form	Verb Form
Author	I am a _____ -reader. (Shakespeare…)	I read _____ a lot. (Shakespeare…)
Beverage*	I am a _____ -drinker. (Coke…)	I drink _____ a lot. (Coke…)
Dessert	I am a _____ -eater. (chocolate…)	I eat _____ a lot. (chocolate…)
Movie	I am a _____ -watcher. (classic movies…)	I watch _____ a lot. (classic movies…)
Music	I am a _____ -listener. (classical music…)	I listen to _____ a lot. (classical music…)
Pet*	I am a _____ person. (dog…)	I enjoy _____ a lot. (dogs…)
Pizza	I am a _____ -eater. (Pepe's pizza…)	I eat _____ a lot. (Pepe's pizza…)
Sports*	I am a _____ fan. (basketball…)	I enjoy _____ a lot. (basketball…)

Note. *Noun phrase coded as commonly used.

Figure 1

Essentialist Noun Labels and Social and Self-Perception



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Notes

[1] Before conducting all tests of statistical significance, the noun-verb difference score was calculated for each composite (i.e., overall, strength, stability, and resilience composite) and tested for outliers. Because one outlier (i.e., more than three standard deviations from the mean) was found on the resilience difference variable, it was transformed using a square root procedure. The significance test was then conducted and effect size calculated on this transformed variable using a single sample t-test. To permit comparison with other analyses, means for each condition from the untransformed variable are reported.

[2] Two outliers were found on the overall difference variable, one more than three standard deviations above and the second more than three standard deviations below the mean. In addition, one outlier each was found on the stability and resilience difference variables (more than three standard deviations below the mean), and each variable also contained a near outlier (2.80 or greater standard deviations above the mean) in the opposite direction. Because all three variables contained relatively extreme values in both tails, statistical transformation did not create variables without an extreme value. Therefore, to ensure that the effect was reliable, we followed the advice of Tabachnick and Fidell (1996) and changed each outlier to one unit more extreme than the next most extreme value in its distribution and conducted a follow-up one-sample t-test on each of the three relevant difference variables. The results were essentially identical to those of the untruncated variables reported above: the overall effect was significant, $t(207) = 2.34$, $p = .020$, the effect for the stability variable was marginal, $t(205) = 1.79$, $p = .075$, and the effect for the resilience variable was significant, $t(206) = 2.27$, $p = .025$.

[3] We also tested whether evaluations of noun or verb phrased topics varied by their placement within noun and verb phrased clusters (i.e., as first, second, or third). We found no

consistent pattern: neither evaluations of noun-phrased topics by placement, $F < 1$, nor evaluations of verb-phased topics by placement, $F(2, 192) = 2.37$, $p = .096$, reached statistical significance.

[4] Because one outlier (i.e., more than three standard deviations from the mean) was found, this significance test was conducted and effect size calculated after the variable had been transformed using a square root procedure. To permit comparison with other analyses, the mean difference from the untransformed variable is reported above and in Figure 1.

[5] For example, it is possible that perceiving one's use of abstract (or concrete) language to characterize a preference leads people to consider that that attitude might be a central (or peripheral) aspect of their identity. In turn, this supposition might lead to perceptions, memories, and inferences consistent with a strong (or weak) version of the attitude, which could yield a strong (or weak) attitude evaluation.

[6] Eighteen individuals rated the commonness of the noun phrases used in Study 1, and an additional twenty-four individuals rated the commonness of those used in Studies 2 and 3. Ratings were made on a seven-point scale ranging from "Novel" (1) to "Very Common" (7). Noun phrases receiving average ratings greater than five were classified as common; those receiving average ratings of five or lower were classified as novel. Noun phrases coded as common in this manner were rated as more common than their novel counterparts in both the Study 1 stimuli (common: $M = 6.36$; novel: $M = 3.51$), $t(17) = 15.56$, $p < .001$, and the Studies 2 and 3 stimuli (common: $M = 6.10$; novel: $M = 3.61$), $t(23) = 10.65$, $p < .001$.