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The Cognitive Functions of Linguistic Categories in Describing Persons: Social Cognition and Language

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Three studies examined the cognitive implications of linguistic categories in the interpersonal domain. On the basis of conceptual and linguistic criteria, we advance a four-level classification that distinguishes between verbs and adjectives in the interpersonal domain. These four levels (in terms of increasing abstractness) are descriptive action verbs, interpretive action verbs, state verbs, and adjectives. Results from the first two studies reveal a systematic relation between the respective linguistic category and the temporal stability of the quality expressed in the sentence, the sentence's informativeness about the subject, the sentence's verifiability and disputability, and the sentence's informativeness about a specific situation. Results from the last study support the four-level linguistic classification and its differential cognitive functions. Implications for social cognition and personality research are discussed.

In the three studies reported in this article, we examine the cognitive functions of different linguistic categories used to describe persons and their behaviors. The aim is to elucidate how language mediates between social cognition and social reality. The interface between language and social cognition remains a relatively neglected issue in the burgeoning field of social cognition (cf. Fiske & Taylor, 1984; Markus & Zajonc, 1985; Wyer & Srull, 1984). Aside from work on aspects of communication processes such as speech acts (cf. Clark, 1985; Kraut & Higgins, 1984), there are a few studies that have examined the social cognitive implications of different linguistic categories in the interpersonal domain (e.g., Au, 1986; Brown & Fish, 1983; Fiedler, 1978; Kanouse, 1972; McGuire, McGuire, & Cheever, 1986; Semin & Greenslade, 1985).

Considerations of this type were in fact at the origins of attribution theory. Heider (1958) emphasizes this issue as a fundamental tenet in his analysis of the psychology of interpersonal relations (p. 9 ff). Indeed, much of the work on attribution theory, interpersonal interactions, and impression formation relies on the use of interpersonal terms (e.g., verbs such as *respect, enjoy, talk,* or adjectives such as *friendly, outgoing*). As succinct descriptions of interpersonal events or properties of persons, such terms have been extremely useful in laboratory studies concerned, for example, with the examination of causal attributions of interpersonal events (cf. Abelson & Kanouse, 1966; Cunningham & Kelley, 1975; Cunningham, Starr, & Kanouse, 1979; DiVitto & McArthur, 1978; McArthur, 1972; Orvis, Cunningham, & Kelley, 1975; Ruble, 1973). On the other hand, there is substantial work in the personality domain on the organization of adjectives as trait terms (e.g., Allport & Odbert, 1936; Goldberg, 1977; Norman, 1963; Rosenberg & Sedlak, 1972; Wiggins, 1985). These efforts focus on the systematic use of traits to discriminate between persons and examinations of the semantic space occupied by adjectives. More recent studies have examined the susceptibility of trait terms (adjectives) to evidence (Rothbart & Park, 1986). Although linguistic terms in the interpersonal domain have played an important role in diverse areas of social psychology and personality, they have not been subjected to a more systematic analysis with regard to their psychological implications as linguistic categories. Of course, linguists and psycholinguists have been interested in the meanings and types of presuppositions of specific interpersonal verbs (Fillenbaum & Rapaport, 1971; Fillmore, 1971). For example, the analyses of verbs of judging (e.g., *scold, praise*) and the presupposed responsibility in such verbs (see Fillmore, 1971) have implications for attributions of causality and responsibility (cf. Kelley, 1967, 1973). This article's aim is to advance a general framework for the cognitive implications of linguistic categories in the interpersonal domain rather than focusing on specific properties of interpersonal verbs (e.g., presupposed responsibility, causality, etc.) and adjectives separately.

In the literature on the psychological implications of verbs and adjectives there exist different distinctions (e.g., action verbs vs. state verbs, Brown & Fish, 1983; immediate terms [verbs] vs. mediate terms [adjectives], Semin & Greenslade, 1985). These distinctions are informative and have yielded interesting theoretical and empirical results; however, as we shall see, there has been no cross-referencing between these frameworks and an absence of an overall framework. Here we would like to introduce a general taxonomy for the terms used in the interpersonal domain with the following examples: (a) A is *talking* to B; (b) A is *helping* B; (c) A *likes* B; and (d) B is an *extraverted* person.[1]

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[1] Nouns referring to properties and propensities of persons were not included in the studies reported here. The present research is deliberately confined to the psychological and semantic functions of linguistic terms in the emphasized, explicit predicates of sentences. Terms in the role of presuppositions are excluded from the analysis because they in-

In the first example we have a neutral description of an action. A is talking to B and no interpretation of the action is involved, merely a description of it (cf. immediate terms, Semin & Greenslade, 1985). There is concrete reference to a behavior that allows the behavior's classification and its discrimination from other behaviors such as drinking, smoking, and so forth. The statement is uncontentious in that it is easily verifiable. A number of verbs fall into this category, for example, *hold, visit, call,* and the like. However, in the second example (A is helping B), the verb does not involve the mere description and classification of a specific behavior but also its interpretation. There exist an abundance of verbs that fulfill not only the function of behavior classification and discrimination but also interpretation (e.g., *encourage, mislead, cheat, flatter,* etc.). Although these verbs fulfill a similar function in describing a concrete behavior (i.e., their external reference can easily be established and the truth value of the statement can be examined), they nevertheless also involve something more than mere description. These verbs are *interpretive action verbs* (IAVs) (e.g., action verbs, Brown & Fish, 1983) in contrast to those in the first example, which are *descriptive action verbs* (DAVs). The third example (A likes B) is the description of a person in a situation. However, the verb's status is qualitatively different from the first two examples. In this case, the statement refers to the psychological state of Person A in relation to Person B. The statement does not maintain a concrete reference to a specific behavior episode or event. It is in fact an abstract statement that usually cannot be verified objectively by an observer, has a hypothetical interpretive status, and refers primarily to the psychological state of Person A in the situation in question. These types of verbs (e.g., *love, respect, abhor, trust*) are referred to as *state verbs* (SVs; cf. Brown & Fish, 1983; Miller & Johnson-Laird, 1976). The fourth example is identical to the *mediate terms* category introduced by Semin and Greenslade (1985) and in this article is referred to as *adjectives* (Adjs). It serves to discriminate Person A from other persons who are introverted, anxious, reserved, and so forth, and allows a classification of Person A in relation to others. These terms are abstract and maintain only a mediate reference to empirical events and actions.[2]

When the corpus of all interpersonal terms in the lexicon is considered, the classification of most terms as DAVs, IAVs, SVs, or Adjs is in a sense obvious. Even in the absence of objectively defined criteria, the meaning of the categories as outlined is often sufficient to discriminate between terms on an intuitive level. There are, however, problematic instances or borderline cases that require more than these general specifications for their classification. Because the classification of the terms is treated here as an independent variable, it is essential to provide explicit linguistic criteria above and beyond the previous specifications. The following are the criteria that were explicitly used to classify interpersonal terms in Study 1.

1. The distinction Adj versus DAV, IAV, and SV is given unambiguously and formally and in terms of qualities/properties of persons (Adj) versus actions or psychological states.

2. The distinction SV versus IAV and DAV consists of the fact that SVs are detached from observable behavioral events (cf. Table 1). SVs refer to mental and emotional states or changes therein as opposed to overt behavior. IAVs and DAVs, but not SVs, normally have a clearly defined beginning and end for an action. Indeed, the distinction between state and overt action verbs is one commonly made in the linguistic literature (cf. Miller & Johnson-Laird, 1976). In those exceptional cases in which the distinction is ambiguous (most notably with verbs of judging, cf. Au, 1986) the instances can be disambiguated in the context of language use.[3]

3. From a conceptual point of view, the most difficult distinction concerns the delineation of DAVs versus IAVs. The interpretive versus descriptive contrast alone is insufficient because interpretiveness is a matter of degree rather than an absolute feature. Many DAVs have an interpretive component, although IAVs involve a greater depth of interpretation. However, it is difficult to specify such a criterion explicitly. Another possibility is presented by the argument that many IAVs have a pronounced evaluative component (e.g., positive IAVs such as *help, amuse, encourage* vs. negative IAVs such as *cheat, attack, harm*), whereas DAVs do not (e.g., *phone, talk, hold*). This may also be regarded as problematic because there are several DAVs that imply positive social relations (*kiss, hug*) or negative social relations (*kick, shoot*) and some IAVs that appear to be neutral in valence (e.g., *influence, interact with, select*). One might argue that the evaluative aspect of DAVs such as *kiss* or *kick* is mainly a matter of pragmatics, whereas in the case of IAVs it is the semantics of the terms themselves that are positive or negative, but this in itself would only complicate the distinction.

Therefore, we used the following criterion, which can be applied with reasonable objectivity in the classification of these terms: DAVs are descriptive in the sense that there is at least one physically invariant feature shared by all actions to which the term is applied (e.g., *kiss* always involves the mouth, *phone* always involves the phone, *kick* always involves the foot, etc.). In contrast, there is no physically invariant feature in the case of IAVs, which refer to a multitude of different actions that may have nothing in common (e.g., there is no single common feature shared by the different instances of *helping, hurting, challenging,* etc.).

Some important cognitive implications of the categories we

volve fundamentally different processes of inference and reference. Such terms may be regarded as characteristic of the impact of presuppositional information (cf. Fillmore, 1971; Loftus, 1975). The social roles and condensed actions expressed by nouns such as *father* or *thief* typically occur as presuppositions in sentences (e.g., *The father did not care for his children* or *The thief felt remorse*). In cases where the same noun appears in the position of the focused predicate (*The young man is the thief*) the noun use may be regarded as an adjectival case.

[2] Although this may be seen as one of the main functions of adjectives in the interpersonal domain, most adjectives may also be used to classify behaviors (e.g., an extraverted behavior, a polite behavior, etc.) that are taken to be behavioral instances of a particular trait. The main referent of adjectives, however, remains persons rather than specific instances of behaviors in everyday life, and the general usage is person rather than behavior centered.

[3] Depending on the context, verbs of judging (such as *accuse, blame, praise*) may denote an overt (speech) action or a mental state or attitude. We do not consider these instances as examples for the classification. However, it should be pointed out that the disambiguation of these instances in fact provides evidence for the classification advanced here.

Table 1
The Classification Criteria for the Three Verb Classes

Category	Criteria	Examples
State verbs	Refer to mental or emotional states; no clear definition of beginning and end; do not readily take the progressive form; not freely used in imperatives	like hate notice envy
Interpretive action verbs	Refer to general class of behaviors; have a defined action with a beginning and end; have positive or negative semantic connotations	help cheat inhibit imitate
Descriptive action verbs	Refer to one particular activity and to at least one physically invariant feature of the action; action has clear beginning and end; usually do not have positive or negative connotations	call kiss talk stare

term IAVs and SVs have been investigated by Abelson and Kanouse (1966), Caramazza, Grober, Garvey, and Yates (1977), Fiedler (1978), McArthur (1972), and more recently by Brown and Fish (1983). These studies address the issue of the causality implicit in verbs. The consistent finding across these studies is the following: When a sentence in the form of subject–verb–object is presented and the subject's task consists of judging the locus of causality of the behavior expressed in the verb, then sentences including IAVs are regularly attributed to the subject, whereas sentences including SVs are attributed to the object. For example, the sentence *Bob helps Mike* implies that the cause of the behavior in question is Bob's helpfulness rather than Mike's helpworthiness. However, the sentence *Ted likes Paul* points to Paul's likability rather than Ted's likingness as the implicit cause of behavior. The issue of causality implicit in language provides additional ideas about the psychological variables related to the four-level classification.

First, it has repeatedly been shown that sentences containing SVs are more person-specific, whereas sentences containing IAVs are more situation-specific (cf. Abelson & Kanouse, 1966). Thus, given the IAV sentence *Bob helps Mike,* the frequent inference made is that Bob helps other people as well and that Mike is helped by other people. However, the likelihood to generalize the SV sentence *Ted likes Paul* to other persons is less (Abelson & Kanouse, 1966). On the other hand, this sentence, although more person-specific, allows for more generalization over time—*to like* refers to a more enduring state than *to help.* Extrapolating from this difference to the other two categories, Adjs and DAVs, an important feature of the proposed four-level classification emerges: Adjectives should be even more person-specific (i.e., refer to traits or dispositions) than SVs, and DAVs should be even more context-specific in their reference than IAVs.

Second, IAVs may induce an observer perspective because they refer to observable, manifest behaviors (help, hurt, inhibit, etc.). On the other hand, SVs often refer to nonobservable, subjective states of the sentence subject (like, admire, abhor, etc.) and might therefore induce an actor perspective, which usually gives rise to more situation attributions (cf. Jones & Nisbett, 1972). Although this difference is not readily extrapolated to the extreme categories (DAVs and Adjs) for which subject attribution is almost always trivial, the social psychological processes underlying the actor–observer discrepancy may be related to different levels of language use. Thus, it is tempting to consider the possibility that language may be regarded as reflecting or mediating the different attributional tendencies of actors and observers (or listeners and speakers, cf. Farr & Anderson, 1983).

Third, the causal information implicit in IAVs and SVs might be attributed to the fact that IAVs often refer to controllable, voluntary behaviors, whereas SVs typically describe uncontrollable affects or cognitive states. The usual linguistic test for a state verb (cf. Miller & Johnson-Laird, 1976) is that they do not freely take the progressive form (e.g., *He believes in Santa Claus* and not *He is believing in Santa Claus;* cf. Kenny, 1963; Ota, 1963). Furthermore, as Brown and Fish (1983) and Miller and Johnson-Laird (1976) noted, these verbs are not freely used in imperatives. The examples Miller and Johnson-Laird (1976, p. 474) quoted are *Know the answer! Need money!* etc. The analogous extension of this observation to Adjs appears to be ambiguous where some imperative forms appear to be inadequate when trait terms are used (e.g., *be extraverted*), whereas others are quite acceptable (*be friendly, be polite*), although the reference of such sensible imperative forms is highly situated. Broadly speaking, however, another psychological function that the different linguistic forms can serve may lie in the communication of which behaviors are externally controllable. This aspect appears to be related to the criterion of enduringness or temporal stability mentioned earlier. What is malleable or changeable lends itself to external control. What is stable or endurable is not open to control.

Fourth, Brown and Fish (1983) have considered the possibility that the morphology of language as a system may underlie the causal impact of IAVs and SVs. Thus, it is worth noting that most adjectives derived from IAVs (e.g., helpful) are attributive to the natural sentence subject, whereas the majority of adjectives derived from SVs (e.g., likable) are attributive to the object of the behavior in question. Brown and Fish refute this possibility by arguing that English derivational morphology provides enough suffixes to derive from IAVs and SVs adjectives that are applicable to both subject and object attributes.

Pilot Study and Study 1

The aforementioned criteria constitute converging linguistic guidelines to discriminate among the four categories in the interpersonal domain. One could argue that these four linguistic categories are organized on a concreteness–abstractness dimension. At the one end are DAVs that maintain an immediate reference to concrete behavioral events, whereas Adjs, at the other end, maintain an abstract reference to a person's psychological properties (traits, dispositions). The issue addressed here is the general psychological implications of the concreteness–abstractness dimension along which the four linguistic categories are ordered. With more abstract reference of the linguistic category one would expect the terms to imply more temporal stability and to be more informative about a person. However, the more abstract linguistic categories also would by implication be less informative about specific situations and less verifiable and

more disputable than concrete terms. Thus, our aim was to examine psychological properties that vary systematically over the four categories rather than focusing on particular features that are distinctive of some of the four categories (e.g., the susceptibility of traits to behavioral evidence, Rothbart & Park, 1986; causality implicit in IAVs and SVs, Brown & Fish, 1983; Fiedler & Semin, in press; types of presupposition in specific interpersonal verbs, Fillmore, 1971). The first two studies constitute an examination of those psychological features that differentiate among the four categories on this dimension.

One such feature is the *enduringness* of the quality ascribed to the person in question. Sentences with DAVs do not permit the inference of any stable characteristics or qualities about a person. In the case of Adjs, however, there is an assumption of a temporal stability of the quality in question, namely a disposition or trait. The two intermediate categories refer to different durabilities of characteristics in time; that is, *lying* refers to a characteristic that is manifested in an action, whereas *loving* refers to a psychological state of longer duration, but not a permanent state (exceptions in both cases are regarded as pathological). It would therefore appear that there is a dimension of enduringness, a psychological propensity that varies between the four categories.

Another interrelated implication is this: How much information do sentences with these linguistic categories yield about the subject? In the case of DAVs, this information is minimal and increases as a function of the category from IAVs to SVs to Adjs. To say that someone is talking (DAV) contains less information about the subject than to say someone is threatening somebody (IAV), in contrast to saying someone abhors somebody (SV), in contrast to saying someone is brutal (Adj). This criterion is referred to as *subject informativeness.*

Symmetrical to the subject informativeness criterion, one can also consider how much information such sentences contain about specific situations in which the subject of the sentence might be, namely the *situative informativeness.* To say that someone is extraverted (Adj) does not reveal much about a specific and concrete situation. However, examples such as someone is talking to, phoning, or holding somebody else (DAVs) are directly associated with concrete events and therefore reveal something about a particular situation. In this case, we would assume a descending situative informativeness from DAVs to Adjs, Adjs being least informative about specific situational characteristics.

The concreteness–abstractness dimension also implies that the degree to which sentences containing either of these categories can be objectively verified by a potential observer will vary. In the case of DAVs the observer/listener should have no problems verifying the content of the sentence. This is similarly the case with IAVs, although there may be some debate about interpretation in this instance. In the case of SVs the problem becomes considerable because the only person who can attest to the truth value or falsity of the statement is the actor to whom the sentence refers. Finally, the ascription contained in Adj sentences is in principle completely open to debate. We refer to this property of the classification as the issue of *verifiability.*

The last criterion concerns a social property highly related to verifiability, namely, *disputability.* This issue concerns the contentiousness of the propositions contained in statements with any of these four categories. The assumption is that the likelihood of disagreement about the propositions contained in statements will increase from sentences containing DAVs to sentences containing Adjs as a function of their concreteness–abstractness.

In the following studies we attempted to establish whether the four categories differentiate along this dimension of abstractness–concreteness. This was done by providing subjects with minimal sentences (e.g., S is *successful* [Adj], S *visits* someone [DAV], S *harrasses* someone [IAV], S *likes* someone [SV]). All the terms were sampled from the interpersonal domain. By using the aforementioned five criteria as dependent variables (subject informativeness, situative informativeness, enduringness, verifiability, and disputability), we designed the pilot study and Study 1. The aim was to examine whether the analytically derived four-level classification would yield a corresponding unidimensional empirical classification on the basis of the psychological implications of these linguistic categories.

Method

Participants. Eighty undergraduate students at the University of Sussex, Brighton, England, participated in this study on an paid voluntary basis. They participated in small groups of 4 to 8 persons.

Procedure. Each participant received a booklet. The cover page contained the following general instruction:

> This is a psycholinguistic study in which we are investigating how informative different verbs and adjectives are in describing persons. In order to examine this, verbs and adjectives will be presented to you in what one may call minimal sentences. Your task consists in answering several questions concerning the information conveyed in each sentence about the subject of the sentence. Obviously, the informativeness of such minimal sentences is limited. However, they do vary in their degree of informativeness about persons. These differences in information conveyed about persons is precisely what we are interested in finding out.

Subsequently, they were provided with eight such minimal sentences (of which two were constructed with DAVs, two with IAVs, two with SVs, and two with Adjs, presented in a random order) to form an idea of the type of sentences to expect in the questionnaire. They were then provided with the five questions that constituted the dependent measures as an overview of the types of questions that they would answer after each sentence. Finally, the instruction sheet ended with the following qualification:

> You may find some of these questions difficult to answer for particular sentences. Do not hesitate to draw any possible inferences from the sentence that you are provided with in order to be able to answer all five questions. Please work through this questionnaire carefully and do not omit any of the sentences or the questions associated with each sentence.

Each of the 80 subjects received in their booklet only 36 of the 72 randomly selected stimulus terms (cf. Table 2). The presentation of the stimulus items was randomized for each subject.

Selection of stimulus materials. A representative sample of terms for the four linguistic categories was drawn by (a) defining the population of all English interpersonal terms and (b) drawing from this population a random sample that fulfilled several restrictive criteria. The aim of this exhaustive procedure was to ensure the generalizability of any empirical differences that we would obtain to the population of all terms. The selection of these terms was obtained on the basis of the broad criteria

Table 2
Randomly Selected and Typical Stimulus Terms

Linguistic category			
DAV	IAV	SV	Adj
Randomly selected stimulus terms			
call†	attack†	abhor	altruistic†
catch	blackmail†	admire†	brutal
find†	correct†	accept†	fair†
hold†	command	commiserate	foolish
lift†	denigrate†	envy†	ignorant†
phone†	deride	fear	friendly
photograph†	denounce†	desire†	jealous
prepare†	encourage	hate	offensive
pull aside†	excite	hold in contempt	patient†
stare	harrass†	like†	peaceful†
stop	hurry	love†	quiet†
summon	intervene	mourn for	shrewd
take something from	hurt†	prefer†	strange
tickle†	manipulate†	respect†	stubborn
touch	mislead	recognize	successful†
visit	restrict†	suspect	sympathetic
wake up†	thank	understand†	youthful†
watch	threaten†	worry	vain†
Typical stimulus terms			virtuous†
dance	amuse	detest	aggressive
dial	betray	dread	anxious
drive	cheat	envy	charismatic
hug	deceive	esteem	impulsive
kiss	disobey	like	intelligent
push	flatter	loath	moody
shout after	harm	notice	outgoing
touch	help	pity	pessimistic
wash	save	remember	reliable
wave	warn	trust	reserved

Note. DAV = descriptive action verb, IAV = interpretive action verb, SV = state verb, and Adj = adjective. Terms with a dagger were used in the experimental study.

mentioned in the introduction and not the more explicit criteria (cf. Table 1).[4]

The basic population of terms was selected from a small English dictionary (Langenscheidt, 1967) that contains only the most common English words. Using a more exhaustive English dictionary would have made this extraction task insurmountable. A basic catalogue of 50 DAVs, 322 IAVs, 33 SVs, and 846 Adjs was extracted and assigned by the authors' consensus according to the criteria that all terms (a) referred to interpersonal behaviors; (b) were not of a metaphoric or ambiguous meaning; (c) were not derived from the same word stem or from another term; (d) did not represent participles, negations, or comparatives; and (e) appeared more frequently than 10 per million according to the Thorndike-Lorge count.

The 72 terms were drawn randomly from this population for each of the four linguistic categories (see the first half of Table 2). There were 18 terms per category.

A small pilot study was conducted to test the efficacy of independent criteria for the four-level classification. Four naive subjects were provided with the 54 verbs used in Study 1. Adjectives were not included because they are unequivocal. The subjects were asked to classify these verbs (each presented on a separate index card) into three groups (i.e., DAVs, IAVs, and SVs) along with the following instructions: (a) descriptive action verbs—objective identification of an elementary behavior (e.g., to address someone), in general no evaluation involved; (b) interpretative action verbs—interpretation of a behavior as belonging to a general action class (e.g., to help), which could be manifested through a variety of different behaviors and the interpretation typically involves an evaluation; and (c) state verbs—internal (i.e., emotional or mental) states or changes of state and no overt actions (e.g., to grieve).

The 4 subjects used in this pilot study correctly classified 100% of DAVs, 88.89% of IAVs, and 87.5% of SVs, providing evidence for the appropriateness of the broad criteria used to classify interpersonal verbs into these three categories.

Dependent variables. Each minimal sentence was accompanied by five questions, one for each of the criteria of subject informativeness, enduringness, verifiability, disputability, and situative informativeness. The respective questions were (a) How revealing is the attribute (action) about the subject of the sentence? (subject informativeness), (b) How enduring a quality does the attribute (action) in this sentence express about the subject? (endurability), (c) To what extent can the content of the above statement be objectively verified? (verifiability), (d) If the above statement were mentioned by someone, how likely is it that it could potentially lead to disagreement? (disputability), and (e) How much does the above sentence reveal about a specific and concrete situation in which the subject is? (situative informativeness).

Results

First of all, the mean ratings (across all participants) of the 72 linguistic terms (cf. the first half of Table 2) were obtained for the first study. The covariances among the mean ratings on all five dependent variables provided the input for a multiple discriminant analysis with the intention of (a) confirming the classification and (b) understanding its relation to the five criteria. The solution successfully separated the four linguistic categories. Of the 72 terms, 61 (i.e., 84.72%) were classified correctly, and of the remaining 11 displaced cases, only 1 was not placed in the neighboring category. In fact, each of the five dependent criteria alone is sufficient to reproduce the order of at least three of the four stages in the classification. This can be seen from the graphic representation of the categorywise means and variances for the five individual criteria in Figure 1A. As can be seen from Figure 1A, Adjs are the category with the highest subject informativeness, refer to the most enduring quality, are the least verifiable (except for SVs), give rise to the highest amount of disputability, and are the least informative about a situation. DAVs follow precisely the opposite pattern. SVs and IAVs occupy the predicted intermediary positions, with the exception of subject informativeness and verifiability. Aside from these descriptive statistics, the F statistics for the differences among the four groups were highly significant for each criterion. The within-groups correlations among the five criteria range from .07 to .70 (accounting for .005% and .49% variance) and suggest that the contribution of each individual rating was not merely a result of their redundancy.

Of the three canonical discriminant functions that can be ex-

[4] The selection of the items for this study was conducted with a broad set of criteria (mainly with reference to the distinction between the interpretive action verb [IAV] and descriptive action verb [DAV]), and not the more explicit distinction between IAV and DAV. Therefore, some items in this study were included under DAV, such as *prepare* and *stop*, which on closer inspection did not fall into the DAV category. Indeed, in the analysis of the data these two items are empirically classified under DAV (cf. Results section).

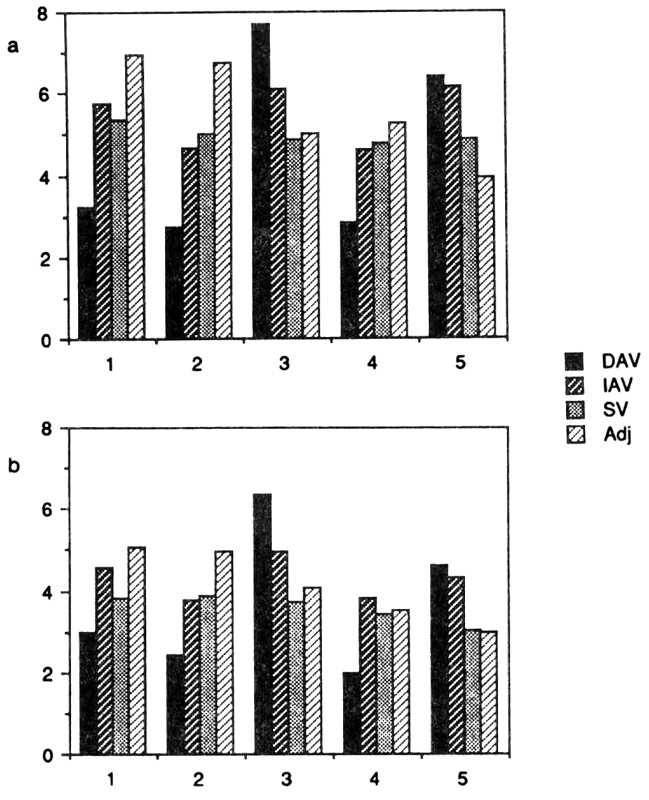

Figure 1. Mean ratings and variances of the four classes of linguistic terms in terms of subject informativeness (1), enduringness (2), verifiability (3), disputability (4), and situation informativeness (5). (DAV = descriptive action verb; IAV = interpretive action verb; SV = state verb; and Adj = adjective. 1 = high values under SU indicate high subject informativeness; 2 = high values under EN indicate high enduringness; 3 = high values under VE indicate high verifiability; 4 = high values under DI indicate high disputability; and 5 = high values under SI indicate high situation informativeness.)

tracted in the case of the four groups, the first accounts for 82% of the systematic variance, leaving no more than 9.97% and 7.93% to be explained by the second and third dimensions, respectively. This means that the psychological differences of the linguistic classes can appropriately be described as a monotonic order along a single dimension of concreteness–abstractness. Considering the (standardized) coefficients of the five variables on the dominant first discriminant function, the strongest contribution (b = .61) is because of the rating of situative informativeness (i.e., how much a sentence reveals about a specific and concrete situation). Enduringness (b = .53) also contributed substantially, whereas the criteria of disputability (b = .30), person informativeness (b = .29), and verifiability (b = .37) maintained moderate relations to the first discriminant function.

The random selection of stimulus terms actually suppresses the strength of the relations that could be obtained with a more typical sample of terms. Typical, in this context, refers to choosing exemplars for the four categories within the strict definitional criteria advanced in the introduction (cf. Table 1). To this end a replication of the pilot study was conducted with 40 new terms (second half of Table 2) that were chosen carefully to comply with the explicit criteria advanced earlier. Twenty subjects from the University of Sussex participated in this study. The methodology used was identical to that in the previous study, except that 7-point rating scales were used instead of 9-point rating scales. We performed exactly the same analysis. The results were identical (cf. Figure 1B). However, in this case the solution successfully separated 97.5% of the cases, with only one adjective (aggressive) being misclassified as an SV. Essentially, the same detail for the discriminant analysis was obtained (of the three discriminant functions, the first explained 86.5% of the variance, etc.).

Discussion

The results of these studies support the assumption that the four linguistic categories are organized along a dimension of concreteness–abstractness and that their systematic ordering along this dimension is related to the cognitive implications of the linguistic terms as measured by the five dependent variables. These cognitive implications include the informativeness of sentences regarding the subject or the situation, and the enduringness, verifiability, and disputability of the proposition expressed in the sentence. In general, as one moves from DAVs to IAVs to SVs, and, finally, to Adjs, subject informativeness increases, situative informativeness decreases, and the sentence appears more endurable, less verifiable, and more likely to be the object of disagreement or dispute. The regularity by which the linguistic classes are monotonically related to these cognitive implications is consistent with the assumption of a common psychological dimension underlying all four word classes. Moreover, the proportion of 84.72% correct classifications in the first study and of 97.5% correct classifications for the replication from the discriminant analyses seems impressive, particularly if one considers the systematic sampling procedure for the first study that allows the results to be generalized over the whole lexicon.

Nevertheless, the conclusions that can be drawn from this study are limited. The main reason is that this study is confined to the cognitive implications of the semantic descriptions of the terms themselves and does not examine the interactions of these terms with given person types and situations. How are these terms used to describe specific persons in specific contexts? In other words, what is the impact of these linguistic classes in sentences including more than just *subject–verb–object?* If it can be demonstrated that the contextualized use of these categories is affected by the nature of the linguistic category on the dimension of concreteness–abstractness, then this would have substantial implications for a range of studies in social psychology and personality that rely on verbal material in the interpersonal domain. Essentially, this would mean that one would have to control for the regularities produced by the linguistic features of the categories used in such studies.

Study 2

To address the aforementioned issues, we conducted another experiment that examined the cognitive functions of the four linguistic categories. This study's aim was to test the differential semantic and psychological implications of these linguistic categories in their contextualized usage.

A study was designed (derived from Semin & Greenslade,

1985) in which the subjects' task consisted of judging the likelihood that a target person would manifest a series of behaviors (DAVs, IAVs, and SVs) and attributes (Adjs) in a particular situation. The characteristics of the target person were manipulated by providing subjects with brief pen pictures of an extravert, an introvert, and a Machiavellian. Orthogonally, the situation factor was manipulated by providing different behavioral settings, that is, a seminar, a party, and a business deal.

If DAVs constitute the most concrete categorical reference in the interpersonal domain, then their use should be affected by variations not only in information about both situations and persons, but also in their interaction. Different persons have different concrete behavioral styles, different situations have different behavioral requirements, and a person who is of a specific dispositional nature generally behaves differently in different situations. Concrete behavioral variations of this nature should be picked up by DAVs. On the other hand, if Adjs are the most abstract category, then it is unlikely that they will be influenced by variations in situations. Indeed, adjectives were judged in the first study to be least informative about concrete situational features. Furthermore, the Adj end of the concreteness–abstractness continuum is regarded as the most informative about persons (cf. the criteria of subject informativeness and enduringness in Study 1). Thus, the relative impact of the target person manipulation should increase from DAV to Adj and the relative impact of the situation manipulation should decrease.

In addition, an increasing reliance on interpretive processes should be observed with an increase in abstractness of category (from DAVs to Adjs). The more abstract categories are expected to be mediated by semantic interrelations (i.e., conceptual similarity). Therefore, one would expect semantic similarity to account for an increasing amount of the covariance in the inferences from more abstract sentences; namely, covariations of likelihood judgments should be predictable from independent conceptual similarity judgments.

The resulting study consisted of a 3 × 3 (Target Persons × Situations) between-subjects factorial design for each of the linguistic categories. The items consisted of a series of behaviors (DAVs, IAVs, and SVs) and adjectives that subjects had to judge with respect to their relative likelihood of occurrence for a specific target person in a specific situation. Independently, conceptual similarity judgments between all the items of a given category were obtained.

Method

Participants. One hundred and five undergraduate students at the University of Sussex, Brighton, England, participated in this study on a paid voluntary basis. Fifteen were assigned to the conceptual similarity task and the remaining 90 were assigned randomly to the experimental conditions. They participated in small groups of 3 to 5 persons.

Overview. Each participant received one of nine booklets. Their task consisted of judging the characteristics and behaviors that a target person would manifest in a particular situation. The first independent variable was varied such that each booklet contained a specific reference to one of three situations (i.e., a seminar, a party, or a business deal). The description of the target person was varied orthogonally to the situation variable. The target person was described as either a prototypic extravert, a prototypic introvert, or a Machiavellian. The design was therefore a 3 × 3 between-subjects factorial involving three target person conditions and three situation conditions for each of the four linguistic categories. The items for the four linguistic categories were presented in a randomized order as 40 stimulus terms (10 for each of the four categories of DAVs, IAVs, SVs, and Adjs). There were 10 subjects per cell. The subjects' task consisted of judging the likeliness that the target person would manifest each of 30 behaviors and 10 adjectives in a given situation.

Procedure. All participants received a booklet. The cover page contained the general instructions for the experiment and described it as "an examination of the behaviors that people manifest in a situation and the characteristics they display." They were then provided with a description of the target person and a situation and were asked to judge the likelihood that the target person would manifest a particular set of behaviors and adjectives.

Manipulation of the target person. Participants were given one of three target person descriptions. A third of the subjects were presented with a description of a typical extravert, a third with that of a typical introvert, and the final third with that of a typical Machiavellian. The extravert and introvert descriptions of the target persons were taken from the Eysenck Personality Inventory (Eysenck & Eysenck, 1976) and the Machiavellian description from Christie and Geis (1970).

Manipulation of the situation. After receiving the general instructions and the description of the target person, subjects were provided with one of three situation conditions. Depending on their situation condition, subjects were asked to imagine the target person in either a seminar, party, or business deal situation.

Dependent measures. After receiving these instructions and descriptions, participants were asked to judge the likelihood that a target person would manifest each of a series of 30 behaviors and 10 adjectives in a specific situation. They used a 7-point scale with ends labeled *not at all frequently* (1) and *very frequently* (7).

The 30 behaviors consisted of 10 DAVs, 10 IAVs, and 10 SVs that were selected from the first study and were the 10 most discriminating members of their respective linguistic categories. The 10 Adjs were also extracted from the first study using the same criteria. (These items are marked with a dagger in Table 2.)

Conceptual similarity. Fifteen participants were presented with 180 pairwise combinations (45 for each linguistic category) in a random order over a monitor, with the following instructions:

> Your task in the following study consists in judging the similarity in meaning between pairs of words. For each pair you have to indicate how similar or dissimilar they are in meaning. For this task you have a 9-point scale at your disposal, where scale position 1 indicates *not at all similar* and the scale position 9 indicates *highly similar.*
>
> Please give your judgment for each pair by pressing the corresponding key on the keyboard.

Participants were then given instructions about how to use the keyboard.

Results

Conceptual similarity. The first hypothesis examined concerned the degree to which the usage of the linguistic categories was influenced by the conceptual interdependence between the items within each linguistic category. To examine this hypothesis, an independent Pearson product-moment correlation matrix (the interitem correlations of the likelihood ratings for the 10 stimulus items across the participants in each cell) was computed for each of the nine cells of the design separately for each linguistic category. The nine interitem correlation matrixes under each linguistic category were then correlated with the independently obtained conceptual similarity judgment matrixes

Table 3
Correlations Between Co-Occurrences and Abstracted Semantic Relations

	DAVs			IAVs			SVs			Adjs		
Situation	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3
S1	−.19	−.20	−.00	.50	.08	−.07	.14	.12	.22	.32	.50	.11
S2	.06	.20	.09	.05	.04	−.04	.54	.24	−.10	.72	.48	.11
S3	.34	.05	.10	.56	.10	−.05	.11	.22	.15	.36	.36	.43
r^a		.050			.142			.205			.392	

[a] Z-transformed average *r*s for each 3 × 3 matrix.
Note. P1 = extravert target; P2 = Machiavellian target; and P3 = introvert target. S1 = seminar; S2 = party; and S3 = business deal. DAVs = descriptive action verbs; IAVs = interpretive action verbs; SVs = state verbs; and Adjs = adjectives.

for the respective linguistic categories (mean similarity between item pairs obtained on the basis of conceptual similarity judgments independently for each of the linguistic categories: DAVs, IAVs, SVs, and Adjs). This involves correlating interitem likelihood judgment *r*s, obtained separately for each cell of the 3 × 3 design, under each linguistic category, with interitem conceptual similarity. As can be seen in Table 3, the average correlation between the conceptual similarity matrix and the respective behavior (DAVs, IAVs, and SVs) and adjective (Adjs) increases as a linear function of linguistic category from .05 (DAVs) to .14 (IAVs) to .21 (SVs) to .39 (Adjs). This distinctive pattern supports the proposed relation; namely, that there is an increased reliance on mediation by abstract, semantic, or logical relations implied between the terms from DAVs to Adjs.[5]

The differential impact of the situation and person manipulations. To examine the differential sensitivity of the different linguistic categories to the orthogonally manipulated contextual variables in the design (namely, situation and target person), four multivariate analyses of variance (MANOVAs) were conducted. The first analysis was carried out with the verbs under the DAV category. Our hypothesis suggests that DAVs should be affected by both context manipulations and their interaction. As expected, the multivariate main effect for the target person was significant, $F(20, 144) = 5.08$, $p < .001$, as well as the multivariate main effect for situations, $F(20, 144) = 1.91$, $p < .015$, and the Target Person × Situations interaction, $F(40, 274.87) = 1.98$, $p < .001$. The univariate effects suggest that for the target person factor, 7 of the 10 DAVs gave rise to significant main effects; for the situations factor, 3 of the 10 DAVs produced significant main effects; and, finally, 5 of the 10 interaction terms were significant.

In the case of IAVs our hypothesis suggests only a main effect for the target person manipulation. The MANOVA for IAVs revealed a significant multivariate main effect only for the target person factor, $F(20, 144) = 9.62$, $p < .001$, with a nonsignificant situations main effect, $F(20, 144) = F < 1$, and a nonsignificant interaction term, $F(40, 274.87) = 1.14$. An examination of the univariate main effects for the target person main effect revealed that all IAVs but one were significant (cf. Table 3).

In the MANOVA for SVs, a pattern similar to that for IAVs is obtained. There is only a significant multivariate main effect for the target person factor, $F(20, 144) = 9.94$, $p < .001$.

Finally, the MANOVA for Adjs revealed a significant multivariate main effect for target person, $F(20, 144) = 14.11$, $p < .001$, and the Target Person × Situations interaction was also significant, $F(40, 274.87) = 1.66$, $p < .01$. The situation main effect was nonsignificant ($F < 1$). All the univariate target person main effects were significant; in the case of the interaction, only two univariate effects reached significance.

The patterns obtained through these four multivariate and univariate analyses are in line with the predictions advanced, namely that DAVs are differentially sensitive to both properties of the target person and situation manipulations as well as to the interaction. The monotonic decline of this sensitivity for situations from IAVs to SVs to Adjs is not directly apparent from the multivariate and univariate analyses. To examine these particular relations, we used an additional statistic that allowed us to make specific comparisons and thus examine the hypotheses concerning the differential sensitivity of the four linguistic categories for the contextual parameters as manipulated by the target person and situation factors. This additional index is obtained by calculating the respective η^2 for the multivariate terms. Eta squared is a measure approximating the amount of variance explained (cf. Moosbrugger, 1978; Tatsuoka, 1971). A comparison of η^2 for the different terms of the multivariate

Table 4
Amount of Variance Explained by the Contextual Factors and Their Interaction

	Amount of variance (%)			
Factors	DAVs	IAVs	SVs	Adjs
Main Effects				
Target Person	65.7	81.7	82.4	88.6
Situations	37.6	21.2	14.2	22.1
Interaction				
Target Person × Situations	68.1	44.1	40.7	56.2

Note. DAVs = descriptive action verbs; IAVs = interpretive action verbs; SVs = state verbs; and Adjs = adjectives.

[5] One might argue that the results in Table 3 are an artifact resulting from the fact that there is little variance in the pairwise similarity ratings for descriptive action verbs (DAVs) and that this variance increases from DAVs to adjectives (Adjs). The evidence does not support this. The respective variances of semantic similarity ratings for DAVs, interpretive action verbs, state verbs, and adjectives are the following: .71, 1.32, 1.35, and 1.01. None of the $F(9, 9)$ values reach significance.

analyses of each of the four linguistic categories allows us to examine the hypothesis more precisely. According to the hypotheses and the results from the pilot study and Study 1 we would expect the amount of variance explained through the target person multivariate main effect to increase from DAVs to Adjs. As can be seen in Table 4, this is the case. Furthermore, we would expect the amount of variance explained for the situations factor to decrease from DAVs to Adjs. This predicted relation is found for DAVs, IAVs, and SVs. In the case of Adjs we find that the amount of variance explained for the multivariate situation main effect is smaller than for DAVs but greater than in the case of IAVs and SVs. Thus, adjectives do not follow the predicted trend for the situation manipulation. Nevertheless, the overall pattern of η^2 differences is in general agreement with the predictions and with the findings of Study 1: With increasing abstractness from DAVs to Adjs, the inferences are increasingly dependent on characteristics of the target person, in line with their higher subject informativeness. Conversely, information about the situational context becomes increasingly important as one moves from SV to IAV to DAV, in line with the higher situation informativeness of specific terms shown in Study 1. The perfect monotonicity of these trends is violated only by the unexpectedly high impact of situational factors on Adj sentences (22.12%). Although we lack a cogent explanation for this datum, there are three possible explanations for this finding. One possibility is that the 3:1 ratio of verbs to adjectives may have created a set (in some of the judges some of the time) to interpret sentences as actions rather than traits (e.g., interpreting *an extravert in a seminar being fair* as *an extravert acting fairly in a seminar*), thereby producing an η^2 for Adjs that is similar to IAVs. Alternatively, the single datum may simply be a result of chance fluctuations. One final and serious possibility emerges if one considers Rothbart and Park's (1986) study. This study shows quite clearly that there is a broad range of variation among adjectives with respect to the ease in imagining behaviors that confirm or disconfirm an adjective. That is, some adjectives appear to be more directly associated with concrete behaviors than others, and it is possible that this factor may have contributed to this unexpected finding.

Finally, it should be noted that the overall pattern obtained through the comparisons of the η^2 across these main effects runs in the opposite direction to the correlations obtained between the conceptual similarity matrixes and the co-occurrence matrixes for the situations factor, and in the same direction for the target person factor (cf. Table 3). This produces a pattern that is in general agreement with the predicted inverse relation between the increasingly decontextualized or abstracted reference from DAVs to Adjs and the decreasingly situated and contextual sensitivity in the reverse direction.

Discussion

The results of the experimental study provide general support for the hypothesis that the four linguistic categories are organized differently along a continuum of concreteness–abstractness (from DAVs to Adjs). Thus, adjectives as the most abstract category show a low contextual dependence and a high conceptual interdependence in their usage. The DAV end of this classification is concrete and primarily directed toward contextual features, such as the behavioral and situative contingencies of persons' activities. The two intermediary categories (IAVs and SVs) maintain graded positions in this respect. The results indicate that the use of these categories is mediated increasingly by the abstract, semantic, and logical relations between the terms as one proceeds from DAVs to Adjs. This is shown first by the correlations between the pattern of the use in each category and the conceptual similarity matrix for the terms. This correlation increases as a function of category type from DAVs to Adjs. Second, it is demonstrated by the amount of variance explained for each of the two factors (target person and situations). Whereas the amount of variance explained for the target person factor increases from DAVs to Adjs in a linear manner, there is a corresponding decrease in amount of variance explained for the situations factor. In the case of the situations factor and the Target Person × Situation interaction, the adjectives deviated from the predictions. Although the amount of variance explained was lower than in the case of DAVs, it was still somewhat higher than for SVs. One possible reason for these two unexpected results is the following. There may be considerable variation among trait concepts or adjectives with respect to the types of behavioral referents they imply. Indeed, Rothbart and Park (1986) show this to be the case. Some adjectives may have very clear behavioral referents (e.g., messy), whereas others (e.g., devious) may not. It may therefore be the case that with adjectives one would have to explore this dimension more clearly in future research.

General Discussion

What are the implications of the semantic and psychological functions of the four most commonly used linguistic categories in the description of persons and their behaviors? One of the more immediate and obvious implications for social psychological and personality research concerns the relation between the type of research question addressed and the types of verbal instruments used as dependent variables. The differential sensitivity of these linguistic categories as qualitative and interpretive comments on behavior at one end of the continuum (the prototypical case being Adjs) or as concrete comments on the situational and personal parameters of ongoing action (the typical example being DAVs) has serious consequences for questionnaire construction. Our studies suggest that these different linguistic categories, in fulfilling different functions, direct observers' attention to different aspects of an ongoing episode. Whereas DAVs allow an observer to differentiate situational and personal parameters of ongoing action, this sensitivity decreases gradually from IAVs to Adjs. Although there is an increased sensitivity to person parameters, there is a qualitative difference in that the use of these terms gradually becomes governed more by abstract, logical, or semantic relations than by the specific contingencies of the situations. This is demonstrated in Study 2 by the increase in the amount of variance accounted for by semantic similarity from DAVs to Adjs. The concrete implication of this theoretical framework has been drawn out by Semin and Greenslade (1985) in relation to the systematic distortion hypothesis (e.g., Shweder, 1982). According to the systematic distortion hypothesis, in its most concisely stated form, "*inferences* about personality contain a systematic bias in that propositions about 'what is like what' are substituted for propositions about what is likely, and *memory* for personality relevant events

contains a systematic bias in that attitudes, affects, and behaviors that are conceptually associated . . . are recalled as if they covaried" (Shweder, 1982, p. 66). In this case, Semin and Greenslade were able to argue and show that the choice of linguistic category for ratings is the major factor contributing to systematic distortion. Thus, if subjects are asked to describe targets in terms of adjectives, then the patterns of co-occurrence between adjectives are largely accounted for by abstract relations existing in language, giving rise to results predicted by the systematic distortion hypothesis. However, the use of a mixture of DAVs and IAVs to describe persons' behaviors in situations from memory does not yield the hypothesized bias. Disregarding the role of such linguistic factors inevitably leads to a confusion between cognitive processes and the different functions that language fulfills in the description of persons and their behaviors.

The more speculative implications of these findings concern how these categories may be used in real-life settings. Let us consider the following objective event. Bob misses a day at school and when asked does not tell the true reason to the teacher. This event may be coded, among other things, as either *Bob is dishonest* or *Bob lied.* Whereas the first sentence conveys decontextualized information and involves a categorization of Bob, the second sentence maintains a reference to the situational conditions. This becomes particularly apparent under conditions when such statements are challenged, namely by questions such as *Why did you say that?* or *What do you mean?* The nature of the defense when challenged in the case of *Bob lied* is through reference to concrete evidence and a description of the event. In the case of statements such as *Bob is dishonest* it appears likely that a defense can be established by further abstracted statements that do not maintain a direct reference to a concrete empirical event. That is, the object can produce further supportive sentences with other adjectives, which are semantically related to *dishonest,* and establish what on the surface may appear to be a legitimate case.

In conclusion, it appears that although decontextualized linguistic forms are often immunized against disconfirmation and do not easily lend themselves to critical examinations, they nevertheless fulfill the functions of cognitive economy. If we were to avoid abstract linguistic forms in our communications and rely exclusively on concrete descriptive forms, then the obvious result would be a communication breakdown. This would also mean having to store all concrete references, which would lead to an insurmountable information overload for human memory. Additionally, the rules governing conversation require, as Grice (1975) pointed out, the cooperative principle. This involves (among other things) the requirement that in conversation the contribution be as informative as possible (maxim of quality) while not making it more informative than required (maxim of quantity). It should also be brief and orderly. This means that statements should not contain more information than necessary for comprehension. Thus, to the extent that senders and receivers share some background information, descriptive terms will be replaced by interpretive and decontextualized terms. One final conclusion that emerges in the light of these three studies is that in the examination of social cognitive processes, language as a mediator between social reality and social cognition needs to be more carefully considered than it has been to date.

References

Abelson, R. P., & Kanouse, D. E. (1966). Subjective acceptance of verbal generalizations. In S. Feldman (Ed.), *Cognitive consistency: Motivational antecedents and behavioral consequents* (pp. 171–197). New York: Academic Press.

Allport, G. W., & Odbert, H. S. (1936). Trait names: A psycho-lexical study. *Psychological Monographs, 47,* (1, Whole No. 211).

Au, T. K. (1986). A verb is worth a thousand words: The causes and consequences of interpersonal events implicit in language. *Journal of Memory and Language, 25,* 104–122.

Brown, R., & Fish, D. (1983). The psychological causality implicit in language. *Cognition, 14,* 233–274.

Caramazza, A., Grober, E., Garvey, C., & Yates, J. (1977). Comprehension of anaphoric pronouns. *Journal of Verbal Learning and Verbal Behavior, 16,* 601–609.

Christie, R., & Geis, F. (1970). *Studies in Machiavellianism.* New York: Academic Press.

Clark, H. H. (1985). Language use and language users. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology: Vol. 2* (3rd ed., pp. 179–232). New York: Random House.

Cunningham, J. D., & Kelley, H. H. (1975). Causal attributions for interpersonal events of varying magnitude. *Journal of Personality, 43,* 74–93.

Cunningham, J. D., Starr, P. A., & Kanouse, D. E. (1979). Self as actor, active observer, and passive observer: Implications for causal attributions. *Journal of Personality and Social Psychology, 37,* 1146–1152.

DiVitto, B., & McArthur, L. Z. (1978). Developmental differences in the use of distinctiveness, consensus, and consistency information for making causal attributions. *Developmental Psychology, 14,* 474–482.

Eysenck, H. J., & Eysenck, S. (1976). *Manual of the Eysenck Personality Inventory.* Sevenoaks, England: Hodder and Stoughton.

Farr, R. M., & Anderson, T. (1983). Beyond actor-observer differences in perspective: Extensions and applications. In M. Hewstone (Ed.), *Attribution theory* (pp. 45–64). Oxford, England: Blackwell.

Fiedler, K. (1978). Kausale und generalisierende Schlüsse aufgrund einfacher Sätze [Causal and generalizing inferences from simple sentences]. *Zeitschrift für Sozialpsychologie, 9,* 37–49.

Fiedler, K., & Semin, G. R. (in press). On the causal information conveyed by different interpersonal verbs: The role of implicit sentence context. *Social Cognition.*

Fillenbaum, S., & Rapaport, A. (1971). *Structures in subjective lexicon.* New York: Academic Press.

Fillmore, C. J. (1971). Verbs of judging: An exercise in semantic description. In C. J. Fillmore & D. T. Langendoen (Eds.), *Studies in linguistic semantics* (pp. 273–296). New York: Holt, Rinehart & Winston.

Fiske, S. T., & Taylor, S. E. (1984). *Social cognition.* Reading, MA: Addison-Wesley.

Goldberg, L. R. (1977). *Language and personality: Developing a taxonomy of trait-descriptive terms.* Invited address at the Division of Evaluation and Measurement, 85th Annual Convention of the American Psychological Association, San Francisco.

Grice, H. P. (1975). Published in part as "Logic and conversation." In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics: Vol. 3. Speech acts* (pp. 365–372). New York: Seminar Press.

Heider, F. (1958). *Psychology of interpersonal relations.* New York: Wiley.

Jones, E. E., & Nisbett, R. E. (1972). The actor and observer: Divergent perceptions of the causes of behavior. In E. E. Jones et al. (Eds.), *Attribution: Perceiving the causes of behavior.* Morristown, NJ: General Learning Press.

Kanouse, D. E. (1972). Language, labelling and attribution. In E. E. Jones et al. (Eds.), *Attribution: Perceiving the causes of behavior* (pp. 121–136). Morristown, NJ: General Learning Press.

Kelley, H. H. (1967). Attribution theory in social psychology. In D. Lev-

ine (Ed.), *Nebraska symposium on motivation* (Vol. 15). Lincoln: University of Nebraska Press.

Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist, 28,* 107–128.

Kenny, A. (1963). *Action, emotion, and will.* New York: Humanities Press.

Kraut, R. E., & Higgins, E. T. (1984). Communication and social cognition. In R. S. Wyer, Jr. & T. K. Srull, (Eds.), *Handbook of social cognition: Vol. 3* (pp. 87–127). Hillsdale, NJ: Erlbaum.

Langenscheidt's Pocket Dictionary (1967). (45th ed.) Berlin: Langenscheidt.

Loftus, E. F. (1975). Leading questions and the eyewitness report. *Cognitive Psychology, 7,* 560–572.

Markus, H., & Zajonc, R. B. (1985). The cognitive perspective in social psychology. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology: Vol. 2* (3rd ed., pp. 179–232). New York: Random House.

McArthur, L. (1972). The how and what of why: Some determinants and consequences of causal attribution. *Journal of Personality and Social Psychology, 22,* 171–193.

McGuire, W. J., McGuire, C. V., & Cheever, J. (1986). The self in society: Effects of social context on the sense of self [Special issue on the individual–society interface]. *British Journal of Social Psychology, 25,* 259–270.

Miller, G., & Johnson-Laird, P. (1976). *Language and perception.* Cambridge, England: Cambridge University Press.

Moosbrugger, H. (1978). *Multivariate statistische Analyseverfahren* [Methods of multivariate statistical analysis]. Stuttgart: Kohlhammer.

Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology, 66,* 574–583.

Orvis, B. R., Cunningham, J. D., & Kelley, H. H. (1975). A closer examination of causal inference: The roles of consensus, distinctiveness, and consistency information. *Journal of Personality and Social Psychology, 32,* 605–616.

Ota, A. (1963). *Tense and aspect of present-day American English.* Tokyo: Kenkyushua.

Rosenberg, S., & Sedlak, A. (1972). Structural representations of implicit personality theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 235–297). New York: Academic Press.

Rothbart, M., & Park, B. (1986). On the confirmability and disconfirmability of trait concepts. *Journal of Personality and Social Psychology, 50,* 131–142.

Ruble, T. L. (1973). Effects of actor and observer roles on attribution of causality in situations of success and failure. *Journal of Social Psychology, 90,* 41–44.

Semin, G. R., & Greenslade, L. (1985). Differential contributions of linguistic factors to memory-based ratings: Systematizing the systematic distortion hypothesis. *Journal of Personality and Social Psychology, 49,* 1713–1723.

Shweder, R. A. (1982). Fact and artifact in trait perception: The systematic distortion hypothesis. In B. A. Maher & W. B. Maher (Eds.), *Progress in personality research* (Vol. 2, pp. 65–101). New York: Academic Press.

Tatsuoka, M. M. (1971). *Multivariate analysis.* New York: Wiley.

Wiggins, T. S. (1985). The interpersonal circle: A structural model for the integration of personality research. In R. Hogan (Ed.), *Perspectives in personality* (Vol. 1, pp. 1–47). New York: JAI Press.

Wyer, R. S., Jr., & Srull, T. K. (Eds.). (1984). *Handbook of social cognition. Vols. 1, 2, 3.* Hillsdale, NJ: Erlbaum.

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