The art of exerting verbal influence

through powerful lexical stimuli

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Introduction

For verbal influence to be effective, it has to master a communication trade-off (Fiedler, 2008). On one hand, influential communication must dare to state something new and informative that deviates from the communication partner's old knowledge or opinion. On the other hand, effective communication has to conceal its manipulative purpose, in order to avoid reactance and inoculation effects (Brehm, 2000; McGuire, 1964; Engelkamp, Mohr & Mohr, 1985). The research reviewed in the present article suggests that simple verbal stimuli at the lexical level are ideally suited to meeting this double goal, because word stimuli carry substantial semantic information while often concealing the pragmatic purpose of communication. Words constitute neutral and natural units of information that can be freely combined to produce an infinite number of communicative acts. This flexibility and generative power of language as a symbol system (Glucksberg & Danks, 1975) is at the heart of virtually all verbal influence strategies, in politics, negotiation, scientific argumentation, advertising, deception, ingratiation, and education.

Any expanded question, imperative command, or more elaborate text unit used to advertise an object or to request help may elicit reactance or suspicion. The many nice things a car dealer has to say about the qualities of a used car may be understood as a veridical description of the car, as an attempt to gain money, as a empty professional statement that is routinely repeated with each and every car, or even as plain deception. Likewise, sentence- or paragraph-like requests for help may be framed as an expression of misery, as a joke or role play, or a reflection of the laziness of someone, who might as well help himself or herself. Communication success will obviously depend on the recipient's appraisal and evaluation of the pragmatic situation. An advertisement or request for help will fail if it raises the impression of a selfish, inadequate, unfair, or provocative influence attempt.

Even when communicative acts do not run against the recipients own pragmatic interests, the very detection of an influence attempt may be sufficient to induce reactance or

an inoculation effect in the message recipient. Counter-arguments are often generated spontaneously if only the recipient of a communication is aware of an influence attempt. As spelled out in Brehm's (1966) theory of reactance, any attempt to prescribe certain actions or to forego others will cause in the recipient a counter-tendency to regain his or her freedom of choice. It may therefore be not only necessary to let the speech act appear harmless or prosocial; it may even be necessary to fully distract the recipient from pragmatic thinking and to conceal the speech act as perfectly as possible. Thus, a useful strategy might be to make influence attempts either subliminal or subtle and impoverished enough to prevent the communication partner from drawing pragmatic inferences.

Lexical stimuli are ideally suited for such influence strategies. Reading or hearing the isolated word "fairness" in a football stadium or on a package of coffee just raises the meaning of morality and social exchange, and maybe activates corresponding behavioral scripts. It hardly reveals any specific speech act. People exposed to lexical stimuli will rarely start reasoning whether "fairness" is an arrogant imperative, an expression of a moral value, an unfair attempt to exploit others' cooperation, or a joke or irony. Likewise, lexical primes in advertising like "erotic", "paradise" or "wellness" will hardly raise counter-arguments, or critical questions about the validity or pragmatic meaning of minimal verbal communications (Hansen & Wänke, 2011; Wänke, 2007). Such modest single-word stimuli neither come as promise, nor as ingratiation, deceptive strategy or pretentious assertion. People who are exposed to such unspecified communications will rarely engage in pragmatic reasoning about the advertiser's goals or intentions; they will be simply influenced by the meaning and associative power of the lexical stimuli.

Lexical Stimuli Trigger Implicit Cognition

Verbal Influences as Priming Effects

Using a fashionable term that is playing a central rule in contemporary social and cognitive psychology, the lexical-influence paradigm may be referred to as one-word priming.

It is hardly by coincidence that words constitute by far the largest class of stimuli used in the huge research industry of priming studies. Presenting a related prime (e.g., "professor") before a target stimulus (e.g., "intelligent") not only facilitates the recognition and naming of the target (as evident in faster response latency), or the classification of the target as word or non-word in a lexical decision task, or as positive versus negative in evaluative priming (Fazio, 2001; Fiedler, 2003; Klauer & Musch, 2003). Single-word primes have also been shown to bias subsequent judgments in the direction of the prime (Srull & Wyer, 1980). For example, in an affective-misattribution task (Payne, Hall, Cameron & Bishara, 2010), neutral targets (e.g., abstract drawing or pattern) were judged to be more pleasant or higher in aesthetic value, when the preceding prime words were of positive rather than negative valence. In action priming studies (e.g., Dijksterhuis, Spears, Postmes, Stapel, Koomen, Knippenberg & Scheepers, 1998), priming participants with the lexical stimulus "professor" was even shown to enhance their intellectual test performance, just as priming the concept of the "elderly" served to reduce the participants' walking speed (Bargh, Chen & Burrows, 1996).

In a similar vein, priming of achievement-related words has been shown to enhance participants' achievement motivation (Hart & Albarracìn, 2009). Distrust-related lexical primes induce critical mindsets and more elaborate processing styles (Schul & Mayo, 2004). When such words as "fairness", "morality" and "solidarity" were presented subliminally, or generated in a kind of cross-word puzzle (Smeesters, Warlop, Van Avermaet, Corneille & Yzerbyt, 2003), or remembered in an alleged verbal-learning task (Hertel & Fiedler, 1994), the rate of cooperative behavior in dilemma games increased. Conversely, words associated with aggressive meaning were shown to cause manifest aggressive behavior (Todorov & Bargh, 2002). With regard to therapy and interventions, Shalev and Bargh (2011) argue that priming-based interventions could be easily "… administered by multiple providers and

communication devises to regulate emotional states, increase adherence to treatment instructions, or activate mind-sets that facilitate adaptive functioning" [p. 488].

In a memorable study by Gilovich (1981), several lexical primes were used to jointly activate different historical analogies supposed to bias the participants' political judgments. The cover story of the political-judgment task described an allied country that was threatened by an aggressive neighboring country, and participants had to decide whether their own country (i.e., the US) should intervene. Depending on a few key words included in the cover story, participants were reminded either of the Vietnam War (implying that the US should not intervene) or of Hitler's Blitzkrieg at the beginning of World War II (implying the US should intervene). Most participants actually voted for intervention in the latter condition but were reluctant to suggest an intervention in the former condition.

A common denominator of all these impressive priming demonstrations is that the effective primes were compact word stimuli. One might quickly object that this merely reflects an artificial limitation of experimental research, namely, that the collection or construction of word stimuli is easier and causes less work than the construction of more elaborate text, scripts, film clips, or even more refined priming treatments. However, while this argument may be true, it should not be dismissed as artificial, because it provides a sound explanation of why word primes are so practical. They are freely and richly available in the lexicon. They can be easily combined in flexible ways to guide inference processes (such as historical analogies). They can be tried out ("pilot-tested") quickly in reality or in mental simulations. And, last but not least, because no saccades are necessary to read a word, they can still be understood and exert their basic impact when the word primes are degraded through subtle or subliminal procedures. Thus, the methodological bias toward word priming in past research may reflect just a special case of the pragmatic bias toward word priming in verbal influence strategies.

Beyond Priming Paradigms

It should be noted, though, that priming is by no means the only paradigm that highlights the power of lexical stimuli. The same could be said for the evaluative-conditioning paradigm (De Houwer, 2007). In those evaluative-conditioning studies in which verbal stimuli were used as USs (unconditional stimuli) to be paired with neutral CSs (conditional stimuli), the USs were almost always distinct words (for an overview, see Hofmann, De Houwer, Perugini, Baeyens & Crombez, 2010). In hardly any study were sentences, paragraphs, or narratives used as USs. Again, one might claim that this merely reflects researchers' laziness or preference for simple and well-controlled stimuli. However, influence making in reality is also characterized by economy and the need to exert control over one's communicative acts. It is therefore not surprising that in economic and political reality most conditioning-based influence or advertising strategies rely on commonly understood, handy word labels, such as trait adjectives, affective terms, or celebrity names, rather than more complicated syntactical and pragmatic constructions.

In the false-memory paradigm (Roediger & McDermott, 1985), too, the most convenient and effective means of inducing falsely recalled or recognized stimuli has been the learning of lists of words revolving around a topical concept. For instance, exposure to a stimulus list that includes the words "dream", "pillow", "bed" and "night" will typically mislead a majority of participants to "remember" the semantic core meaning "sleep", although this word was in fact not presented. Likewise, in the context of applied research in the legal context, demonstrations of false memories or reconstructive memory biases are often based on the manipulation of critical words in leading questions. In Loftus and Palmer's (1974) seminal studies, for instance, participants were asked to estimate the speed of a car they had observed on video, in response to the question "How fast were the cars moving when they hit together/smashed together, bumped into each other, collided?" Speed estimates varied greatly as a function of the speed suggested by the meaning of the verb.

In psycholinguistics, the influence of language condensed in words is well known under the label of nominalization. In a frequently cited article – titled "truth is a linguistic question" – Bolinger (1973) provides various examples of nouns and composite nouns that presuppose a fact implicitly, rather than stating it explicitly. Terms like "insurance" or "defence ministry" presuppose implicitly that subscribing a contract warrants security or that the ministry is concerned with peace rather than starting war. Because these critical assumptions are not stated explicitly, the likelihood is low that the validity of the presupposition will be questioned and tested critically. Nominalization is a prominent linguistic tool for presupposition strategies.

A number of recently developed instruments for the unobtrusive measurement of implicit attitudes, stereotypes, and prejudices are also built on lexical ground. As already mentioned, priming-based measures of implicit attitudes (e.g., measuring the speed required to evaluate positive or negative targets following male or female name primes) involve distinct words (unless they use pictures). The same holds for the implicit association test (IAT; Nosek, Greenwald & Banaji, 2005), which almost always consists of simple lexical (or pictorial) stimuli, the sorting speed of which is supposed to measure attitudes, stereotypes, or self-concepts. There is hardly any IAT application involving sentences, narratives, or other complex text variants, which would greatly complicate the interpretation of test results. For the same reason, influence attempts in everyday communication should be equivocal and hard to comprehend if they clearly focus on distinct keywords.

The central role of compact keywords in comprehension and memory organization is evident in the way we organize emails or knowledge in external storage media, like a computer hard-disk. To administrate given information, we typically use word labels or nominal phrases to denote the subdirectories into which we store our information; using longer text units would be inconvenient and inefficient. To gather new information, in Google or encyclopedia, too, we use lexical keywords as search prompts. Whoever tried to google

longer text prompts will probably have experienced the disadvantage and confusion resulting from attempts to be better than words. One has no control about which words are given which weight by the search engine; syntactic relations will be ignored or misunderstood; what was meant as a conjunction of two prompts may be used disjunctively, and so forth.

Constraints and Syntactic Interactions Between Word Primes

This is not to say that lexical effects are not subject to syntactic and pragmatic constraints. In the priming literature, for instance, the notion of identity priming refers to the finding that the impact of a prime on the processing of a target word increases when they are identical rather than just similar (cf. Houwer, Hermans, & Eelen, 1998). Semantic-priming effects can be strengthened by letting more than one related prime precede a target (Balota & Paul, 1996), suggesting that repetition can intensify word-priming effects.

Word ordering effects nicely illustrate the operation of simple and straightforward syntactic influences that operate on the lexical level. For instance, nouns were found to carry more weight for speakers of languages where nouns usually precede adjectives (e.g., Portuguese) than for speakers of languages where adjectives usually precede nouns (e.g., English). In two studies (Percy, Sherman, Garcia-Marques, Mata, & Garcia-Marques, 2009), American and Portuguese participants were presented with either adjective-noun phrases (e.g., "The honest chef", "The honest journalist", "The happy chef"; presented in their native language and in the natural word order of the language), or visual stimuli whose features could be designated by an adjective and a noun (e.g., red circle, red square, blue square).

When they were subsequently asked to make noun-conditioned frequency estimates (e.g., "Of all the chefs presented, how many were honest?", "Of all the circles you saw, how many were red?") as well as adjective-conditioned frequency estimates (e.g., "Of all the happy people presented, how many were chefs?", "Of all the blue things you saw, how many were squares?"), participants from both samples were faster at making the noun-conditioned

estimates than the adjective-conditioned estimates, but this noun-advantage was greater for Portuguese participants compared to American participants.

In other studies by these authors (Mata, Sherman, Percy, Garcia-Marques, & Garcia-Marques, 2012), Portuguese participants made more false recognitions than English-speakers for new items that shared the noun category with old items (e.g., blue square and green square). Also, Portuguese-speakers judged items that shared the noun category (e.g., blue square and green square) to be more similar than English-speakers did, whereas the opposite was the case for items that shared the adjective attribute (e.g., blue square and blue circle). These studies show that the impact of words on memory and judgment can be constrained by native language word order.

Relational constraints come into play when lexical primes vary in abstractness or inclusiveness. Abstract and semantically broad primes are more likely to impact subsequent target responses than concrete and too specific primes, simply because more inclusive primes are semantically applicable to a broader range of targets. In the aforementioned research by Dijksterhuis et al. (1998), for instance, only the inclusive category label "professor" enhanced the participants intellectual performance, but not the specific prime "Einstein", which is probably so specific that participants themselves are excluded from the prime's domain. As a consequence, the "Einstein" prime caused a contrast effect, that is, a performance impairment. In a similar vein, the categorical prime "model" led to higher attractiveness self-ratings in female participants, whereas the specific name "Claudia Schiffer" led to lower self ratings. Schwarz and Bless' (2007) inclusion-exclusion model provides a sensible account for these pronounced inclusiveness effects.

The impact of word primes on target responses and on subsequent judgments and actions can also be moderated by strategic processes. As a general rule, all manipulations of the presentation context or the encoding task that serve to functionally separate the prime from the target will undermine the fusion of prime and target. A growing body of convergent

evidence shows that priming effects are reduced, eliminated or even reversed when the time interval between prime and target onset is too long (Hermans, Spruyt & Eelens, 2003), when primes and targets are hard to integrate or to form a compound (Estes & Jones, 2009), when primes are attended to and memorized as distinct entities (Weidemann, Huber & Shiffrin, 2008), and especially when primes are actively responded to, separately from the target-reaction task (Fiedler, Bluemke & Unkelbach, 2011; Liberman, Förster & Higgins, 2007; Sparrow & Wegner, 2007).

Strategic moderation is also evident in the dependence of priming on the list context. Both the relatedness-proportion effect in semantic priming (Bodner & Masson, 2003) and the congruity-proportion effect in evaluative priming (Klauer, Rossnagel & Musch, 1997) testify to the adaptive flexibility in the way a prime is used. If there is a negative correlation between the meaning or valence of primes and targets in the stimulus context (e.g., if most targets following positive primes are negative and vic versa), participants can learn to invert the normal priming effect. In such a context, they can learn to react faster to targets that mismatch the prime in valence or semantic meaning.

Thus, a number of pronounced interactions and contextual or strategic moderation effects highlight the fact that priming effects are not under rigid stimulus control. Rather, they lend themselves to communication strategies that take such context dependencies into account. However, crucially, the "grammar of priming" (Fiedler et al., 2011) must not be equated with the strict syntactic rules of language, which apply to higher-order text units.

Verbal Influence Based on Strategic Uses of Linguistic Categories

A growing number of empirical findings highlight the systematic impact of lexical stimuli on social influence processes. We believe that the reported evidence – which partly stems from studies conducted in our own lab and partly from others' work on linguistic categories and their cognitive implications – will refute the sceptical argument that lexical analysis provides an impoverished and inadequate picture of language and verbal behavior

(Edwards & Potter, 1993). According to this view, counting and categorizing words can never do justice to the illocutionary and perlocutionary meaning of even the simplest speech act, to figurative language, and to the richness of elegance of narrative information.

Although we share these beliefs in the beauty and uniqueness of creative language and literature, this aesthetic argument must not be confused with scientific evidence about the reliability and validity of measurable aspects of language. Objective measures of speaker intentions, semantic ambiguities, anaphoric references, stylistic tools, hidden messages between the lines, and conscious or unconscious violations of Gice's (1975) maxims of communication would be hard to find. Moreover, many of these higher-order rhetoric means are so original and idiosyncratic that they hardly lend themselves to statistical analyses. In contrast, counting and categorizing words is simple and straightforward and can be easily accomplished by freely available software tools (Pennebaker, Chung, Ireland, Gonzales & Booth, 2007; Tausczik & Pennebaker, 2010). Even though – or exactly because – lexical analysis reduces the miraculous complexity of language to a few objectively assessable aspects, it has a real chance to capture the systematic relations that hold between language and behavior across people and situations. The empirical evidence below is meant to substantiate this notion.

Implicit Verb Causality

A long tradition of research on linguistic categories testifies to the strong and systematic constraints imposed by different word classes on language comprehension and cognitive inferences. In particular, the verbs and adjectives that make up the sentence predicates constrain the resulting attributions and evaluations. Numerous studies on implicit verb causality (Abelson & Kanouse, 1966; Brown & Fish, 1983; Fiedler & Semin, 1988; Garvey & Caramazza, 1974; Rudolph & Försterling, 1997) demonstrate that some verbs like *help*, *attack*, or *insult* suggest a cause in the sentence subject, whereas other verbs like *admire*, *abhor*, or *hate* imply object causation. Within the taxonomy of Semin and Fiedler's (1988)

linguistic-category model (LCM), these two verb classes are referred to as interpretive-action

verbs (IAV) and state verbs (SV), respectively. If *Peter insults Mary*, the causal origin is in

Peter, but if *Peter despises Mary*, then Mary appears to be the cause of the same disrespecting

behavior. *The teacher rewards a student* tells us something about an encouraging teacher,

whereas *The teacher admires a student* points to an unusually smart student. The semantic

correlation is strong and almost deterministic. Almost 90% of all IAV entries in the lexicon

imply subject causation, whereas the vast majority of SVs suggest a cause in the sentence

object.

Just by choosing an IAT or SV for the sentence predicate, one can thus exert a strong

influence on the attribution and evaluation of the protagonist's behavior. Positive IAVs (help,

encourage, save) and negative IAVs (hurt, cheat, insult) are appropriate means of

communicating positive and negative subject intentions, respectively. SVs, in contrast, induce

a re-attribution from the subject to the object. Negative SVs (hate, abhor, fear) provide

excuses for the subject's negative behavior by pointing to an external cause in the sentence

object. Positive SVs (love, admire, long for) serve to relocate positive valence from the

subject, who is only a passive patient or experiencer, to the object person or stimulus, who

becomes the causal and evaluative origin. Thus, by choosing appropriate verbs, a journalist

can either improve or devalue a politician's image, a teacher can praise a student or himself,

prosecutors can blame and defence attorneys excuse the same defendants' behaviors (Schmid

& Fiedler, 1998).

Two boundary conditions facilitate the impact of implicit-verb causality on

attributions and social judgments. First, many reference events and behaviors that are the

topic of communicators are complex and ambiguous enough to allow for considerable

variation in word use. Partners can describe their joint activities and conflicts at different verb

levels; lawyers are free to use IAVs or SVs. Neither the wording of newspaper headlines nor

the predicates used in personal reviews or letters of recommendation are restricted to one particular word class.

Secondly, and most importantly for the success of social influence, the grammatical verb type used in a sentence or utterance goes typically unnoticed. At the meta-cognitive level, neither speakers nor listeners are aware of the use of implicit verb causality as an influence strategy. These are exactly the conditions that render communications both informative (by reducing the ambiguity) and subtle (by concealing the influence strategy).

Most published evidence on implicit verb causality (cf. Rudolph & Förderling, 1997) is restricted to questionnaires asking either for explicit causal ratings (Given the sentence, *Sandra praises Mary*, to what extent is the cause due to something about Peter or Mary?) or for pronoun disambiguation in a sentence completion task like *Sandra praises Mary because she* … Implicit causality is evident from the way in which the pronoun "she" interpreted, either as referring to Sandra or to Mary. Such semantic questionnaire studies with purely verbal stimuli reveal little about the role of language in the attribution of observed, extra-linguistic behavior. Only very few studies have examined implicit-verb causality in the context of objectively given behaviors.

Lexical strategies in prosecutors' and defence attorneys' final speeches. In one of the few exceptions, Schmid and Fiedler's (1988) presented laypeople and lawyers with the evidence from court trials and asked different participants to take the perspective of either a prosecutor or a defence attorney. They were then asked to provide their final speech in a simulated court trial. These speeches were then coded for the occurrence of word classes used as predicates in sentences with the defendant as the subject. In this conversational context, the SV-rate was generally low, and positive IAVs were also hardly applicable to interpretations of the defendants' crimes. However, as expected, the prevalence of negative IAVs – which suggest internally caused, intentional actions – was enhanced in the final speeches of prosecutors, whose goal was to blame the defendant. Defence attorneys, whose goal was to

avoid aggravating connotations, used fewer negative IAVs but resorted instead to SVs and adjectives referring to positive traits. Both laypeople and trained lawyers showed similar shifts in lexical strategies as a function of the accusing or excusing role they were to play. Subsequent research based deliberate manipulations of the verb types in otherwise invariant speeches showed that other people's guilt judgments were actually affected by the manipulation (Schmid, Fiedler, Englich, Ehrenberger & Semin, 1996).

The answer is in the question. Another paradigm, in which manifest social behavior was influenced by the implicit causality of verbs, was first developed by Semin, Rubini and Fiedler (1995) and later refined by Semin and DePoot (1997). The basic idea guiding this approach was the notion that the verb class used in a question (asked by a journalist, interviewer, lawyer, survey researcher) can have a marked influence on the answer (given by a politician, interviewee, witness, survey respondent). For example, when asked to explain why people *read* a certain newspaper or why they *like* a certain newspaper, they referred to their own internal reasons (interest, preference) in the former condition, but with external accounts (newspaper reputation or orientation) in the latter condition.

Semin and DePoot (1997) asked their participants to "think about a specific occasion when you *admired* somebody" (SV) or "… when you *defended* somebody" (IAV). They were then asked to remember as precisely as possible how this experience unfolded and then to describe the episode in their own words. These free descriptions were then coded for the implicit causality, that is, whether the verbs used in the answer assigned the causal origin to the subject or object in the episode. The autobiographical memories solicited by IAV- and SV-questions differed systematically. Whereas IAV-questions led participants to report internally caused events, SV-questions solicited many more externally caused episodes. It was also evident that the behavioral episodes generated in response to SV questions were of clearly higher duration, likelihood of recurrence, stability of the depicted social relationship, and lower in contextual dependence than the episodes prompted by IAT-questions.

Further evidence reported by Semin and DePoot (1997) suggests that responders are not aware of the manipulations inherent in the questions and that the different narratives they produce when answering SV versus IAT questions affect the interpretations of others who listen to their answers. Altogether, these findings highlight the role of question answering in general, and the question verb in particular, in the formation of self-fulfilling prophecies and confirmation biases (Nickerson, 1998).

Constructive influences on person judgments. Lexical influences not only affect the answers and related memories solicited by questions containing different verbs. They can also induce constructive errors and biases in memory and social judgment. Illustrative evidence comes from a series of experiments conducted by Fiedler, Armbruster, Nickel, Walther & Asbeck (1996). Participants first saw a TV discussion dealing with a consumer topic. They were then presented with a list of 12 questions asking whether one target discussant has shown 12 behaviors. Depending on the experimental conditions, these behaviors were expressed by positive IAVs, negative IAVs, positive SVs, or negative SVs. Several minutes later, participants had to rate the target on two sets of 12 trait adjectives that were matched in meaning to the verbs used for the preceding questioning treatment (e.g., *attack* and *turn away* matched to *aggressive* and *arrogant*). The aim of the study was to find out whether merely considering possible behaviors might induce constructive biases in the final trait judgments, even when judges had denied seeing many behaviors that the target actually had not shown.

Indeed, merely construing the target in terms of possible behaviors, regardless of their truth value, resulted in strong constructive judgment biases, which were sensitive to the implicit causality of the verb prompts. Because IAVs imply subject causation, merely considering the target engaging in positive IAVs led to higher positive and lower negative trait ratings, whereas negative IAVs caused relatively more negative impressions. When the analysis was confined only to traits associated with correctly denied (actually false) behaviors, these constructive influences were similarly strong as in the overall analysis. Thus,

denying that the target has attacked others led to increased, rather than decreased ratings of the trait aggressive.

Interestingly, when SVs were used for the questions treatment, the constructive biases pointed in the other direction. Thinking about negative target SVs (Did he *abhor* another discussant?) led to less negative target impressions, obviously because negative SVs suggest external excuses for negative behaviors. Conversely, positive SVs (e.g., *admire*) suggest external causes for positive behaviors and therefore led to less positive ratings. Again, the impact of merely considering the target in the light of different SVs was independent of the truth and semantic applicability of the verbs.

Social exchange and fairness. Related to implicit causality is another difference between IAVs and SVs that has important implications for social interaction. As IAVs, but not SVs, imply that the subject is accountable for his or her actions, IAVs are more likely to invoke the principle of reciprocity or social exchange (Homans, 1958). Preliminary support for this notion comes from an unpublished study (Fiedler, 1993). Participants were asked to judge the impact of given behaviors expressed in simple IAV sentences (e.g., Tom insults Walter) or SV sentences (Tom disrespects Walter) on future behaviors involving the same two persons. Reciprocity was invoked by IAVs, such that after Tom's negative action, it is now Walter's turn to treat Tom negatively while Tom's subsequent behavior is less likely to be negative. Given a negative state (hate, disrespect) in Tom, however, the likelihood is high that Tom will continue to treat Walter negatively. The high endurability and external causality implied by SVs are not compatible with immediate reciprocity.

Linguistic Abstractness and Construal Level

So far, we have been only concerned with two word classes, which trigger causal inferences and attributions. While IAVs (save, hurt) suggest a cause residing in the subject and an emotional consequence in the object, SVs (abhor, long for) suggest an emotion in the subject and a cause in the object. However, the vast majority of empirical studies motivated

by the linguistic-category model (Semin & Fiedler, 1988, 1991) are not concerned with

causality but with implications of abstract versus concrete language (Vallacher & Wegner,

1987). On one hand, descriptive action verbs (DAV) such as *kiss*, *kick*, or *nod* afford the most

concrete word class. These ordinary words reveal little about the actor's character. Their

meaning depends superficially on concrete physical details (lips for kissing), but their deeper

meaning and evaluation is strongly dependent on the situational context (which can render

kicking mean or friendly). As a consequence, the DAVs facilitate inferences that the

behaviors denoted by the verb are common (high consensus), object-specific (high in

distinctiveness), short-lived (low in consistency) and unlikely to raise divergent

interpretations or debates. In contrast, abstract predicates involving adjectives (ADJ) such as

hostile, *fair*, or *honest*, suggest diagnostic person attributes (low consensus) that generalize

across objects, situations and time (low distinctiveness and high consistency). Moreover,

ADJs cannot be observed directly but depend on subjective interpretations, which are often

the focus of debate.

In accordance with Kelley's (1967) ANOVA model of attribution, the low consensus,

low distinctiveness, and high consensus that characterizes abstracts ADJs is strongly

suggestive of a dispositional cause within the subject of behavior. Indeed, ADJs and IAVs can

be conceived as two different linguistic tools for inducing internal attribution, related to two

different attribution theories. While Kelley's attribution determinants consensus,

distinctiveness, and consistency, are wired into the semantic meaning of ADJs, a critical

semantic feature of IAVs is intentional control, which is the chief mediator of subject

attribution in Jones and McGillis' (1976) correspondent inference theory.

Linguistic intergroup bias. Drawing on strategic changes in the abstractness of

language use, Maass and her colleagues have initiated an impressive research program on the

linguistic-intergroup bias (LIB; Maass, 1999; Maass, Milesi, Zabbini, & Stahlberg, 1995,

Maass, Salvi, Arcuri & Semin, 1989). Language users tend to describe negative behaviors of

outgroups and positive behaviors of ingroups in abstract terms, thus suggesting internal

origins and high stability of ingroup-serving information. In contrast, they tend to use

concrete language to describe positive outgroup and negative ingroup behavior, thus reducing

ingroup-threatening information to transitory and superficial factors.

Convergent evidence for LIB has been found in such diverse contexts as political

party discrimination (Anolli, Zurloni & Riva, 2006), gender talk (Fiedler, Semin &

Finkenauer, 1993), modern racism (Schnake & Ruscher, 1998) and hostility between fan

clubs and regional identity groups (Maass et al. 1989). It has been demonstrated, moreover,

that judgments by receivers of communications contaminated with LIB are actually biased in

the direction suggested by the lexical strategies. That is, receivers arrive at more positive

(negative) impressions if the target group's positive behaviors are described abstractly

(concretely) and if their negative behaviors are described concretely (abstractly). It has also

been shown that the communicator's attitudes, motives, and affective states can be reliably

diagnosed from the differential use of abstract and concrete predicates in self- and other

descriptions (Beukeboom & Semin, 2006; Douglas & Sutton, 2006; Slatcher & Pennebaker,

2006).

A fruitful debate emerged about the mediating forces underlying the LIB. Is the

tendency to enhance oneself or one's ingroup the major motive that drives linguistic

abstractness? Or does the phenomenon in fact reflect a linguistic expectancy bias (Wigboldus,

Semin & Spears, 2000), such that communicators tend to express expected information in

more abstract terms than unexpected information. As long as ingroup-serving information is

more expected than outgroup-serving information (because one expects the ingroup to be

positive), the predictions are the same. However, when communications refer to unexpected

ingroup deficits and expected outgroup assets, the available evidence suggests that

expectancies override motivated thinking.

In any case, this research program highlights the systematic consequences of lexical influence strategies, which meet the criterion of being both informative and subtle. The LIB-strategy is informative because it relies on commonly understood implications of abstract and concrete words. At the same time, it is subtle because language users are unlikely and hardly able to monitor the frequency distribution of predicates belonging to different linguistic categories. As a consequence, influential communications need not resort to such direct strategies as lying or lop-sided arguments that blatantly reveal the communicators goals and intentions. They can rather rely on the common ground of all language users' knowledge of knowledge built into the lexicon.

Construal-level effects. The explanatory power of linguistic abstraction is immense. One of the most fertile and successful research programs of the last decade, construal level theory (Trope & Liberman, 2003), testifies to the manifold consequences of abstract versus concrete representations. Abstract, high-level construals lead to simplified, low-dimensional judgments that highlight the idealized desirability of action goals and the global features of decision targets. Concrete, low-level construals, in contrast, result in more complex, multi-dimensional representations that take the feasibility of goals and local features of decision targets into account.

For example, it has been shown that the fundamental attribution error – that is, the generalized bias toward internal attributions in terms of trait-like dispositions – is more pronounced when behaviors are observed from a distant perspective, which is supposed to induce a high level of construal. Carrying this argument one step further, one can predict that (linguistic) abstraction produces the so-called actor-observer bias (Jones & Nisbett, 1972). When observers explain other people's behavior from a distance, they should form more abstract representations leading to more dispositional attributions than actors explaining their own behavior from a proximal perspective. Linguistic analysis of self-referent and other-referent coding behavior descriptions support exactly this prediction (Fiedler et al., 1995;

Fiedler, Semin & Koppetsch, 1991; Semin & Fiedler, 1989). Abstract predicates in general, and dispositional ADJs in particular, are more prevalent in free descriptions of others or outgroups compared to verbalizations of one's own or one's ingroup's behavior.

Another noteworthy function of abstract language is the regulation of social distance and power. Research conducted and reviewed by Semin (2007) indicates that abstract words let social relations appear more distant than concrete words and abstract terms are more applicable and considered more appropriate for distant relations than concrete words. Thus, somebody who does not follow an invitation might excuse his decline with reference to feeling *inappropriate* (keeping high distance) or having to *go to the dentist* (low distance). In a related vein, high-level construal using abstract words serves to indicate high status or power (Smith & Trope, 2006).

The Communicative Impact of Specific Words

The impact of lexical stimuli is by no means confined to differences between grammatical word classes, such as DAV, IAV, SV, and ADJ, or nouns that were recently shown to trigger even more dispositional inferences than ADJs (Carnaghi, Maass, Gresta, Bianchi, Cadinu & Arcuri, 2008). Thus, saying that somebody *is a homosexual* implies even more stable and deeply anchored a disposition than saying that somebody *is homosexual*.

With regard to the power of specific words, for instance, an intriguing demonstration is that *why-* and *how*-questions can be used to induce high-level or low-level construals (Torelli & Kaikati, 2009), respectively, or different modes of motivation regulation (promotion vs. prevention focus; Freitas, Gollwitzer & Trope, 2004). "Why" is an invitation to think about long-term goals and essentialist reasons, whereas "How" asks for incidental details and unintended side-effects. In a similar vein, remembering how one felt happy in the past increases one's current life satisfaction, whereas reasoning about why one felt happy causes a contrast effect, that is, a decrease in current satisfaction (Strack, Schwarz & Gschneidinger, 1985).

Specific words trigger autobiographical memories. In a study aimed at understanding the positive correlations between all four distance aspects distinguished in construal-level theory (i.e., temporal, spatial, social, and probability distance), Fiedler, Jung, Wänke and Alexopoulos (2012) have discovered the key role played by verbal prompts. When specific action verbs were used as prompts to retrieve past memories or generate future construals, the verb-solicited scenarios exhibited a natural ecological correlation of all four distance aspects. Those reference events that were high (low) in temporal and probability distance also tended to be high (low) in spatial and social distance and vice versa. Moreover, the memories and construals solicited by particular verb prompts in different participants were highly similar in terms of their psychological distance. Similar findings were obtained by Fiedler and De Molière (2012) for noun prompts denoting high versus low power (e.g., father vs. son), which led to high versus low distance construals, respectively. These findings highlight the possibility that lexical stimuli can determine retrieval and cognitive construction processes.

Specific words as diagnostic tools. Given the causal impact of verb prompts on cognitive and mnemonic inference processes, it is not too surprising that verb stimuli can also inform diagnostic inferences. For example, the abstractness of positive and negative words used to describe oneself and others, or ingroups and outgroups, has been shown to reveal the communicators' attitudes toward the target person or group (Douglas & Sutton, 2006). In a similar vein, the prevalence of abstract adjectives expressing stable traits in partner-related communication is predictive of relationship quality (Fiedler, Semin & Koppetsch, 1991). Or, variation in linguistic abstractness affords a measure of political attributes implicit in political conversation (Anolli et al., 2006).

In an intriguing research program, Pennebaker and colleagues have recently shown that even the tiniest everyday words – called "chunk words" (Chung & Pennebaker, 2007) – carry an enormous amount of diagnostic and prognostic information. The prevalence of such abundantly used words like first- or third-person pronouns, determinate and indeterminate

articles, prepositions or seemingly empty filler words was shown to be indicative of people's psychic state and the veracity of their communications. For example, an enhanced rate of the first person singular (I, me) expresses low personal distance and therefore indicates positive attitudes and true, non-deceptive communications. Moreover, studies dealing with specific cultural and historical events have found linguistic markers of psychological change surrounding September 11, 2001 (Cohn, Mehl & Pennebaker, 2004) or discovered words that characterize the poetry of suicidal and non-suicidal poets (Stirman, & Pennebaker, 2001). The development of efficient and easily available computer tools for the lexical analysis of even huge text corpora greatly facilitates the growth of this promising and fruitful research on language as a useful diagnostic instrument.

Concluding Remarks

The evidence on "chunk words" as indicators of psychic states, optimistic versus pessimistic attitudes, deception, and self concepts (Pennebaker, Mehl & Niederhoffer, 2003) reiterates, and complements, the central message of this chapter. Useful communications should be both informative and subtle. Apparently, this twofold condition renders communications not only effective and influential, but also revealing about the communicators' motives and personality. The strategic use of words and word classes may be of more diagnostic value than the communicators' explicit declarations and self-referent attributions.

Throughout this chapter, we have provided evidence for lexical stimuli as a basic level of verbal influence. Analogous to Rosch's (1975) notion of basic-level categories in memory and cognitive development, lexical language units seem to provide optimal solutions for the trade-offs of social communication. Words informative enough to carry substantial meaning but elementary and flexible enough to be combined in many different ways. Words meanings are determinate enough to trigger evaluations and attributions but indeterminate enough to be more or less applicable to many different target objects and persons.

The studies we have reviewed testify to the ability of words to bring about social influence. Words afford distinct and powerful primes that trigger mental processes and manifest action. They serve as unconditional and conditional stimuli in associative and instrumental learning tasks. Lexical labels constrain the processes of causal and dispositional attribution, the formation of false memories, the retrieval of genuine information from auto-biographical memory, and the construal of future plans and fantasies. And last but not least, they lend themselves as easily assessable units in diagnostic procedures of content analysis and measurement of communicator goals, intentions, and affective states.

References

Abelson, R.P., & Kanouse, D.E. (1966). Subjective acceptance of verbal generalizations. In S.

Feldman (Ed)., *Cognitive consistency: Motivational antecedents and behavioral*

consequences (pp. 171-197). New York: Academic Press.

Anolli, L., Zurloni, V., & Riva, G. (2006). Linguistic intergroup bias in political

communication. *Journal of General Psychology*, *133*, 237-255.

Balota, D. A., & Paul, S. T. (1996). Summation of activation: Evidence from multiple primes

that converge and diverge within semantic memory. *Journal of Experimental*

Psychology: Learning, Memory, and Cognition, *22*(4), 827-845. doi:10.1037/0278-

7393.22.4.827

Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects

of trait construct and stereotype activation on action. *Journal of Personality and Social*

Psychology, *71*(2), 230-244. doi:10.1037/0022-3514.71.2.230

Beukeboom, C. J., & Semin, G. R. (2006). How mood turns on language. *Journal of*

Experimental Social Psychology, *42*(5), 553-566. doi:10.1016/j.jesp.2005.09.005

Bodner, G.E., & Masson, M.E.J. (2003). Beyond spreading activation: An influence of

relatedness proportion on masked semantic priming. *Psychonomic Bulletin and Review, 10,*

645-652.

Bolinger, D. (1973). Truth is a linguistic question. *Language, 49*, 539-550.

Brehm, J. W. (1966). *A theory of psychological reactance.* Oxford England: Academic Press.

Brehm, J. W. (2000). Reactance. In A. E. Kazdin, A. E. Kazdin (Eds.) , *Encyclopedia of*

psychology, Vol. 7 (pp. 10-12). Washington, DC New York, NY USUS: American

Psychological Association. doi:10.1037/10522-005

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

14, 233-274.

Carnaghi, A., Maass, A., Gresta, S., Bianchi, M., Cadinu, M., & Arcuri, L. (2008). Nomina

sunt omina: On the inductive potential of nouns and adjectives in person perception. *Journal of Personality and Social Psychology*, *94*(5), 839-859. doi:10.1037/0022-3514.94.5.839

Chung, C.K., & Pennebaker, J.W. (2007). The psychological functions of function words. In K. Fiedler (Ed.), *Social communication* (pp. 343-359). New York: Psychology Press.

Cohn, M. A., Mehl, M. R., & Pennebaker, J. W. (2004). Linguistic markers of psychological change surrounding September 11, 2001. *Psychological Science, 15,* 687-93.

De Houwer, J. (2007). A conceptual and theoretical analysis of evaluative conditioning. *The Spanish Journal of Psychology, 10*, 230-241.

De Houwer, J., Hermans, D., & Eelen, P. (1998). Affective and identity priming with episodically associated stimuli. *Cognition And Emotion*, *12*(2), 145-169. doi:10.1080/026999398379691

Dijksterhuis, A., Spears, R., Postmes, T., Stapel, D., Koomen, W., Knippenberg, A., & Scheepers, D. (1998). Seeing one thing and doing another: Contrast effects in automatic behavior. *Journal Of Personality And Social Psychology*, *75*(4), 862-871. doi:10.1037/0022-3514.75.4.862

Edwards, D., & Potter, J. (1993). Language and causation: A discursive action model of description and attribution. *Psychological Review*, *100*(1), 23-41. doi:10.1037/0033-295X.100.1.23

Engelkamp, J., Mohr, G., & Mohr, M. (1985). Zur Rezeption von Aufforderungen [On the reception of imperatives]. *Sprache & Kognition, 2*, 65-75.

Fazio, R. H. (2001). On the automatic activation of associated evaluations: An overview. *Cognition and Emotion, 15*, 115-141.

Fiedler, K. (1993). *Deontic consequences of state verbs and action verbs*. Unpublished research, University of Heidelberg.

Fiedler, K. (2003). The hidden vicissitudes of the priming paradigm in evaluative judgment research. In: J. Musch & K.C. Klauer (Eds.), *The psychology of evaluation: Affective processes in cognition and emotion* (pp. 109-137). Mahwah, NJ: Lawrence Erlbaum.

Fiedler, K. (2008). Language – A toolbox for sharing and influencing social reality. *Perspectives on Psychological Science, 3*, 38-47.

Fiedler, K., Bluemke, M., & Unkelbach, C. (2011). On the adaptive flexibility of evaluative priming. *Memory & Cognition*, *39*(4), 557-572. doi:10.3758/s13421-010-0056-x

Fiedler, K., & De Molière, L. (2012). *Power-related words trigger psychological distance*. Unpublished research, University of Heidelberg.

Fiedler, K., Jung., J., Wänke, M., & Alexopoulos (2012). *On the relations between distinct aspects of psychological distance: An ecological basis of construal-level theory.* Manuscript under revision.

Fiedler, K., Armbruster, T., Nickel, S., Walther, E., & Asbeck, J. (1996). Constructive biases in social judgment: Experiments on the self-verification of question contents. *Journal of Personality and Social Psychology, 71*, 861-873.

Fiedler, K., & Semin, G. R. (1988). On the causal information conveyed by different interpersonal verbs. *Social Cognition, 6*, 21-39.

Fiedler, K., Semin, G. R., & Finkenauer, C. (1993). The battle of words between gender groups: A language-based approach to intergroup processes. *Human Communication Research, 19*, 409-441.

Fiedler, K., Semin, G. R., & Koppetsch, C. (1991). Language use and attributional biases in close personal relationships. *Personality and Social Psychology Bulletin, 17*, 147-156.

Freitas, A. L., Gollwitzer, P., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of Experimental Social Psychology*, *40*, 739–752.

Freytag, P., Bluemke, M., & Fiedler, K. (2011). An adaptive-learning approach to affect

    regulation: Strategic influences on evaluative priming. *Cognition and Emotion*, *25*(3),

    426-439. doi:10.1080/02699931.2010.537081

Garvey, C. and Caramazza, A. (1974). Implicit causality in verbs. *Linguistic Inquiry* 5(3),

    459-464.

Gilovich, T. (1981). Seeing the past in the present: The effect of associations to familiar

    events on judgments and decisions. *Journal of Personality and Social Psychology*,

    40(5), 797-808. doi:10.1037/0022-3514.40.5.797

Glucksberg, S., & Danks, J. H. (1975). *Experimental psycholinguistics: An introduction*.

    Oxford England: Lawrence Erlbaum.

Grice, H. P. (1975). Logic and conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and*

    semantics 3: Speech acts (pp. 41-58). New York: Academic Press.

Hansen, J., & Wänke, M. (2011). The abstractness of luxury. *Journal Of Economic*

    Psychology, *32*(5), 789-796. doi:10.1016/j.joep.2011.05.005

Hart, W., & Albarracín, D. (2009). The effects of chronic achievement motivation and

    achievement primes on the activation of achievement and fun goals. *Journal of*

    Personality and Social Psychology, *97*(6), 1129-1141. doi:10.1037/a0017146

Hermans, D., Spruyt, A., & Eelen, P. (2003). Automatic affective priming of recently

    acquired stimulus valence: Priming at SOA 300 but not at SOA 1000. *Cognition And*

    Emotion, *17*(1), 83-99. doi:10.1080/02699930302276

Hertel, G., & Fiedler, K. (1994). Affective and cognitive influences in a social dilemma game.

    European Journal of Social Psychology, *24*(1), 131-145. doi:10.1002/ejsp.2420240110

Higgins, E.T., Rholes, W.S., & Jones, C.R. (1977). Category accessibility and impression

    formation. *Journal of Experimental Social Psychology, 13,* 141-154.

Hofmann, W., De Houwer, J., Perugini, M., Baeyens, F., & Crombez, G. (2010). Evaluative

conditioning in humans: A meta-analysis. *Psychological Bulletin, 136*(3), 390-421.

doi:10.1037/a0018916

Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, *63*597-

606. doi:10.1086/222355

Jones, E. E., & McGillis, D. (1976). Correspondent inferences and the attribution cube: A

comparative reappraisal. *New directions in attribution research*. Vol, 1, 389-429.

Jones, E.E., & Nisbett, R.E. (1972). The actor and the observer: Divergent perceptions of the

causes of behavior. In E.E. Jones, D.E. Kanouse, H.H. Kelley, R.E. Nisbett, S. Valins, &

B. Weiner, (Eds.), *Attribution: perceiving the causes of behavior*. Morristown, NJ:

General Learning Press.

Kelley, H.H. (1967). Attribution theory in social psychology. In D. Levine (ed), *Nebraska

Symposium on Motivation, Vol. 15* (pp. 192-238). Lincoln: University of Nebraska Press.

Klauer, K. C., & Musch, J. (2003). Affective priming: Findings and theories. In J. Musch & K.

C. Klauer (Eds.), *The psychology of evaluation: Affective processes in cognition and

emotion* (pp. 7–49). Mahwah, NJ: Erlbaum.

Klauer, K.C., Rossnagel, C., & Musch, J. (1997). List-context effects in evaluative priming.

Journal of Experimental Psychology: Learning, Memory, and Cognition, 23, 246-255.

Liberman, N., Förster, J., & Higgins, E. T. (2007). Completed vs. interrupted priming:

Reduced accessibility from post-fulfilment inhibition. *Journal of Experimental Social

Psychology, 43*, 258-264.

Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of automobile destruction: An example

of the interaction between language and memory. *Journal of Verbal Learning & Verbal

Behavior*, *13*(5), 585-589. doi:10.1016/S0022-5371(74)80011-3

Maass, A. (1999). Linguistic intergroup bias: Stereotype perpetuation through language. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, Vol. 31 (pp. 79-121). San Diego, CA: Academic Press.

Maass, A., Milesi, A., Zabbini, S., & Stahlberg, D. (1995). Linguistic intergroup bias: Differential expectancies or in-group protection? *Journal of Personality and Social Psychology, 68*, 116-126.

Maass, A., Salvi, D., Arcuri, L., & Semin, G. R. (1989). Language use in intergroup contexts: The linguistic intergroup bias. *Journal of Personality and Social Psychology*, *57*, 981-993.

Mata, A., Sherman, S. J., Percy, E. J., Garcia-Marques, L., & Garcia-Marques, T. (2012). *The effect of adjective-noun word order on perceived similarity and recognition memory.* Manuscript in preparation.

McGuire, W.J. (1964). Inducing resistance to persuasion. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 1, pp. 191-229). New York: Academic Press.

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, *2*(2), 175-220. doi:10.1037/1089-2680.2.2.175

Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin, 31*, 166-180.

Payne, B., Hall, D. L., Cameron, C., & Bishara, A. J. (2010). A process model of affect misattribution. *Personality And Social Psychology Bulletin*, *36*(10), 1397-1408. doi:10.1177/0146167210383440

Pennebaker, J. W., Chung, C. K., Ireland, M., Gonzales, A., & Booth, R. J. (2007). *The development and psychometric properties of LIWC2007*. Austin: LIWC.net.

Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. (2003). Psychological aspects of natural language use: Our words, our selves. *Annual Review of Psychology, 54*, 547-577.

Percy, E. J., Sherman, S. J., Garcia-Marques, L., Mata, A., & Garcia-Marques, T. (2009).

    Cognition and native-language grammar: The organization role of adjective-noun word

    order in information representation. *Psychonomic Bulletin & Review, 16,* 1037-1042.

Roediger, H., & McDermott, K. (1995). Creating false memories: Remembering words not

    presented in lists. *Journal of Experimental Psychology: Learning, Memory, and*

    Cognition, 21, 803–814.

Rudolph, U., & Försterling, F. (1997). The psychological causality implicit in verbs: A

    review. *Psychological Bulletin*, *121*, 192-218.

Schmid, J., & Fiedler, K. (1998). The backbone of closing speeches: The impact of

    prosecution versus defense language on juridical attributions. *Journal of Applied Social*

    Psychology, 28, 1140-1172.

Schmid, J., Fiedler, K., Englich, B., Ehrenberger, T., & Semin, G. (1996). Taking sides with

    the defendant: Grammatical choice and the influence of implicit attributions in

    prosecution and defense speeches. *International Journal of Psycholinguistics*, *12*(2),

    127-148.

Schnake, S. B., & Ruscher, J. B. (1998). Modern racism as a predictor of the linguistic

    intergroup bias. *Journal of Language and Social Psychology*, *17*(4), 484-491.

    doi:10.1177/0261927X980174004

Schul, Y., Mayo, R., & Burnstein, E. (2004). Encoding Under Trust and Distrust: The

    Spontaneous Activation of Incongruent Cognitions. *Journal of Personality and Social*

    Psychology, *86*(5), 668-679. doi:10.1037/0022-3514.86.5.668

Schwarz, N., & Bless, H. (2007). Mental construal processes. The inclusion/exclusion model. In

    D.A. Stapel & J. Suls (Eds.), *Assimilation and contrast in social psychology* (pp. 119–141).

    New York: Psychology Press.

Semin, G.R. (2007). The regulation and distance. In K. Fiedler (Ed.), *Social communication*

    (pp. 389 - 408). New York: Psychology Press.

Semin, G. R., & Fiedler, K. (1988). The cognitive functions of linguistic categories in

describing persons: Social cognition and language. *Journal of Personality and Social

Psychology, 54*, 558-568.

Semin, G.R. & Fiedler, K. (1989). Relocating attributional phenomena within a language-

cognition interface: The case of actors' and observers' perspectives. *European Journal of

Social Psychology, 19*, 491-508.

Semin, G. R., & Fiedler, K. (1991). The linguistic category model, its bases, applications, and

range. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology*,

(Vol. 2, pp. 1-30). Chichester: Wiley.

Semin G. R., & Poot C. J. de (1997). You might regret it if you don't notice how a question is

worded! *Journal of Personality and Social Psychology, 73*, 472-480.

Semin, G. R., Rubini, M. & Fiedler, K. (1995). The answer is in the question: The effect of

verb causality on locus of explanation. *Personality and Social psychology Bulletin, 21,*

834-841.

Shalev, I., & Bargh, J. A. (2011). Use of priming-based interventions to facilitate

psychological health: Commentary on Kazdin and Blase (2011). *Perspectives on

Psychological Science*, *6*(5), 488-492. doi:10.1177/1745691611416993

Slatcher, R.B., & Pennebaker, J. (2006). How do I love thee? Let me count the works.

Psychological Science, 17, 660-664.

Smeesters, D., Warlop, L., Van Avermaet, E., Corneille, O., & Yzerbyt, V. (2003). Do not

prime hawks with doves: The interplay of construct activation and consistency of social

value orientation on cooperative behavior. *Journal of Personality and Social

Psychology*, *84*(5), 972-987. doi:10.1037/0022-3514.84.5.972

Smith, P. K., & Trope, Y. (2006). You focus on the forest when you're in charge of the trees:

Power priming and abstract information processing. *Journal of Personality and Social

Psychology, 90*(4), 578-596. doi:10.1037/0022-3514.90.4.578

Sparrow, B., & Wegner, D. M. (2006). Unpriming: the deactivation of thoughts through expression. *Journal of Personality and Social Psychology, 91*, 1009-1019.

Srull, T. K., & Wyer, R. S. (1980). Category accessibility and social perception: Some implications for the study of person memory and interpersonal judgments. *Journal Of Personality And Social Psychology*, *38*(6), 841-856. doi:10.1037/0022-3514.38.6.841

Stirman, S. W., & Pennebaker, J. W. (2001). Word use in the poetry of suicidal and non-suicidal poets. *Psychosomatic Medicine, 63,* 517-522.

Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, affect, and mode of thinking. *Journal of Personality and Social Psychology*, *49*, 1460-1469.

Tausczik, Y., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology, 29*, 24-54.

Todorov, A., & Bargh, J. A. (2002). Automatic sources of aggression. *Aggression and Violent Behavior, 7,* 53-68.

Torelli, C. J., & Kaikati, A. M. (2009). Values as predictors of judgments and behaviors: The role of abstract and concrete mindsets. *Journal of Personality and Social Psychology*, *96*(1), 231-247. doi:10.1037/a0013836

Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review, 110*, 403-421.

Vallacher, R. R. & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review, 94*, 3-15.

Wänke, M. (2007). What is said and what is meant: Conversational implicatures in natural conversations, research settings, media and advertising. In K. Fiedler (Ed.), *Social communication* (pp. 223-256). New York: Psychology Press.

Weidemann, C. T., Huber, D. E., & Shiffrin, R. M. (2008). Prime diagnosticity in short-term repetition priming: Is primed evidence discounted, even when it reliably indicates the

correct answer? *Journal of Experimental Psychology: Learning, Memory, and Cognition,*

34, 257-281.

Wigboldus, D. H. J., Semin, G. R., & Spears, R. (2000). How do we communicate

stereotypes? Linguistic bases and inferential consequences. *Journal of Personality and*

Social Psychology, 78, 5-18.

Wittenbrink, B. & Schwarz, Norbert (2007). *Implicit measures of attitudes*. New York, NY:

Guilford Press.