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Goals as a source of activation and suppression

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## Abstract

Building on the research of J.M. Diefendorff, D.J. Snyder, and R.G. Lord (1997) this study investigates goal-related activation and suppression processes using methods adapted from selective attention research. Particularly, this investigation examines activation and suppression of goal-related information when one goal is assigned and a second is ignored, when two goals are assigned simultaneously, and when participants are permitted to choose between the two goals. These effects are also examined both prior to and upon completion of the goal/s. In general, results failed to support strong activation or suppression effects for goal-related information. However, there is some indication that in the presence of an assigned goal, activation of goal-relevant material is stronger than competing goal information only prior to completion of the goal, after which goal-related material becomes deactivated. A similar finding was also present in the condition where both goals were assigned. Potential reasons for these findings and directions for future research are discussed.



Previous research has determined that goal-related measures of activation and inhibition provide a method for studying micro-level processes that affect goal-attainment (Diefendorff, Snyder & Lord, 1997). In situations where multiple distractions are present, there is a need to focus on one goal and suppress competing or distracting goals in order to complete a task. Evidence that goals not only make information more accessible (Goschke & Kuhl, 1993; Marsh, Hicks & Bink, 1998; Marsh, Hicks & Bryan, 1999) but also serve to suppress distractions, has been presented in a few previous studies (Diefendorff, Lord, Quickle, Sanders, & Hepburn, 1995; Diefendorff et al., 1997). The primary purpose of this investigation is to expand upon preceding research on goal-related activation and suppression by examining the impact of various Goal Assignment conditions on the accessibility of relevant information. To this end, this paper will: 1) review the process of activation and suppression in the presence of goals and 2) propose a study of goal-related activation and suppression.

### Goals

Whether they are long term or short term, goals affect our lives by providing a system of organization, and motivation to guide our every day activities (Kruglanski, 1996). Consider that you have the goal of presenting a new project to the board of directors tomorrow. Today, you get up an hour earlier than usual in order to beat traffic. You get to work before most everyone else to get a jumpstart on your normal morning activities. You pass up a friend's invitation to lunch in order to finalize a few graphs. In the afternoon, you ask the secretary to hold all of your calls so that you can put the finishing touches on your speech. You make certain to get a good night's sleep in order to look fresh and awake the next morning. Donning your best suit, you walk out the door with your visual aids ready to conquer the world. In this instance, a single goal has become the framework for thoughts, choices, and actions over the course of two days.

### Goal Setting Theory

Theories of performance suggest that differences in task performance between individuals with equal ability are caused by differences in motivation (Muchinsky, 1990). A key factor for understanding motivational differences is knowing the personal goals that individuals hold for a task. Goal setting theory is based on the premise that setting difficult, task specific goals will directly and positively impact individuals' personal performance. An individual whose goal is detailed and narrowly focused will have very exact expectations for how they should perform, enabling them to more quickly and correctly identify discrepancies from desired performance. This in turn enables individuals with specific goals to more quickly and accurately modify goal-striving efforts to achieve desired performance than individuals with broad, general goals. Furthermore, difficult goals motivate individuals to perform at higher levels than they would with easy goals (Latham and Locke, 1991).

Latham and Locke (1991) identify three mechanisms through which goal setting operates to control behavior: the intensity of effort, the duration of persistence, and the direction of effort (or choice of goal level). First, the difficulty level of a goal dictates the amount of effort and intensity of work that is allotted to accomplishing the goal. Second, in the absence of time constraints, a goal affects how long a person will persist. This is most helpful if the individual encounters obstacles. Within time constraints, a goal will cause an individual to work harder and faster. Third and most relevant to our interests, is how goals direct attention. A goal focuses an individual's attention on information and strategies in long-term memory that are relevant to achieving the goal (Locke and Latham, 1991). This aspect of goals is discussed further in a later section.

Another important consideration in setting goals is the level of a person's commitment to achieving the goal (Hollenbeck & Klein, 1987). Goal commitment refers to the degree to which a person adopts the goal and reflects their determination to accomplish the goal (Campion & Lord, 1982). Commitment is a prerequisite for a goal to influence performance. When commitment to a goal is high, the achievement of goals is more likely than if the commitment is minimal (Latham and Locke, 1991). Kruglanski (1996) discusses the importance of the individual accepting a goal as true or valid. The process of accepting a goal depends on the degree of connectedness and congruency the goal has with related constructs in memory. When a considered goal is congruent with other goals already in place at both higher (e.g., personality) and lower levels (e.g., task strategies) of the goal hierarchy (Diefendorff & Lord, 2000) it is likely that the goal will be adopted and commitment will be high. As Hollenbeck and Klein (1987) suggest, this comparison process involves identifying the value of the goal (i.e. valence) and the likelihood of achieving it (i.e. expectancy). Furthermore, research suggests that being able to choose one's goal increases commitment and the corresponding levels of motivation (e.g., greater effort, persistence, direction of attention.)

### The Hierarchical Organization of Goals

There are a number of different means by which researchers have theorized the relationship between multiple goals. One theory considers goals as being arranged in a hierarchical structure (Powers, 1973). This hierarchy encompasses everything from long-range life goals to immediate behavioral goals. The most general category at the top of the hierarchy refers to an individual's attempts to find a favorable definitive self that orients and gives meaning to life. This goal then has sub-goals cascading all the way down to the level of muscle tension (Austin & Vancouver, 1996). Sub-goals act in service of higher-level goals such that

completion of lower goals is necessary to attain broader, more long-range goals. As Lord and Levy (1994) suggest, at the bottom of the hierarchy are “goals” related to attentional processes such as activation and inhibition. Thus, focusing attention is considered a “sub-goal” (or prerequisite) for the attainment of nearly all goals higher in the hierarchy. One of the primary purposes of the proposed investigation is to demonstrate how attentional processes relate to the pursuit of higher-level goals.

### Activation and Suppression

The environment is continuously presenting us with a stream of information from multiple sources, but due to the limitations of working memory, we are only able to process a portion of the stimuli we perceive (Neill, Valdes, & Terry, 1995). Given the inherent limitations of working memory, conscious attention is only granted to information related to the specific goal at hand, while irrelevant information is not processed at a deep level. Attending to a particular stimulus increases the accessibility of information in long-term memory related to the stimulus and allows further deep-level processing of that object (Neill, Valdes, & Terry, 1995). This increased accessibility of information related to the attended stimuli is referred to as activation. Likewise, information that is related to ignored stimuli is suppressed, or made relatively less accessible, so as not to interfere with current activities. Lord and Levy (1994) discuss a hierarchical organization of cognitive control systems that provide a way of regulating information processing. Central to the functions of knowledge and behavior regulation are the processes of activating relevant information and suppressing information that can derail goal-striving efforts.



### Measuring Activation and Suppression

Priming and negative priming are procedures commonly used to measure activation and suppression (Neil, Valdes, & Terry, 1995). Both tasks involve the participant's ability to select a target (e.g., green word) among distracters (e.g., red word) over a number of trials. When the target is attended to, information related to the target is more readily accessible in working memory and responding to a related target is faster than responding to an un-related target. This facilitating effect is referred to as priming. With regard to negative priming, the typical paradigm involves the presentation of a target and a distracter on one trial and on a second trial the previous distracter becomes the target. Negative priming is said to occur when responding to the previously suppressed information is slower relative to control trials where the target was not previously a distracter. The increased or decreased accessibility of information is demonstrated by a difference in reaction times compared to a control condition with neutral information; a faster reaction time indicates priming and a slower reaction time indicates negative priming (May, Kane, Hasher, 1995; Fox, 1995). The research of Marsh et al. (1999) however, suggests that in the presence of two goals, all goal-related words (whether activated or inhibited) will be responded to faster than neutral material, although words related to the primary goal should still be responded to faster than words related to the other goal.

### Goals as a Source of Activation and Suppression

With a clearer understanding of goals and the processes of activation and suppression, it is relatively simple to grasp the relationship between the two. Goals are formed through both higher-level wishes and desires as well as micro-level processes associated with information processing. Goals are able to direct human behavior because they rein our active minds by focusing our attention. Studying goal-related activation and suppression contributes to the

growing understanding of the cognitive processes that guide our behavior in natural environments (Diefendorff, Lord, Hepburn, Quickle, Hall & Sanders, 1998). As previously mentioned, one of the key mechanisms of goals is their ability to focus attention (Latham & Locke, 1991). Central to this attention-directing characteristic are the dual processes of activation and inhibition.

### Empirical Support

Goschke and Kuhl (1993) conducted research concerning intentions or goals as a source of activation in working memory. A series of four studies showed that intention-related information was more strongly activated than information not related to intentions. Specifically, in comparing the reaction times of participants who were expected to perform a script to those who were instructed to observe a script being acted out, it was found that reaction times to intention-related words were significantly faster when they had formed an intention to perform the activity, than when they had not.

The work of Diefendorff et al. (1995) and Diefendorff et al. (1997) expanded this research on goal-related activation to include goal-related inhibition. Also, where Goschke and Kuhl (1993) examined activation effects with a single goal, Diefendorff and colleagues investigated goal-related activation and inhibition in the presence of two competing goals. In addition to finding an activation effect, they found that information related to a to-be-ignored goal was less accessible than control information suggesting that inhibition may also be in operation when pursuing a goal in a multiple-goal environment (Diefendorff et al., 1997).

### Present Investigation

Largely extending the work of Diefendorff et al. (1995, 1997), this study provides a test of goal-related activation and suppression processes in a real-world application. Using a method

developed by Diefendorff et al. (1995) this study employs a task using procedures analogous to that of priming and negative priming tasks. Specifically, participants concentrated on a goal for responding to a series of work-related in-basket tasks and suppressed an alternative competing goal. A productivity goal (focusing on the company's well-being) and a fairness goal (focusing on the employee's well-being) were used as alternative, potentially conflicting strategies for responding to problems presented in a series of work-related scenarios. It was anticipated that this procedure would result in activation of information related to one goal strategy and suppression of information related to the second goal strategy. To assess these effects, participants responded to words related to both goals and words related to neither goal (control words). This prior research provided support of the use of priming and negative priming as means of observing how activation and suppression facilitate goal directed activity. Based on prior research by Diefendorff and colleagues, the following hypotheses were presented:

Hypothesis 1: Words related to the goal being used will be responded to faster than neutral words (activation effect).

Hypothesis 2: Words related to the to-be-ignored goal will be responded to slower than neutral words (inhibition effect).

#### Goal Assignment, Goal Choice, and Multiple Goals

A contribution of the present investigation is that it examines activation and suppression under conditions of goal assignment, goal choice, and multiple goals. Personal choice and goal assignment are two ways by which an individual might adopt a goal. Studies show that goals assigned by authority figures tend to influence an individual's personal goals (Latham and Locke, 1991). A study by Locke and Latham (1990), found a 0.5 correlation between assigned goals and self-set goals, indicating that goal assignment does affect acceptance, but does not

completely determine the goals people hold. Previous research has compared the effects of goal choice versus goal assignment (Latham and Locke, 1991) and found that when an individual is assigned a goal, they are less involved in the task, and less likely to be committed to implementing the goal than when they are given a choice. This decreased involvement and lower level of commitment in the goal assignment condition may result in diminished activation and suppression effects relative to a goal choice condition.

In an attempt to examine goal usage during the task, Diefendorff et al. (1997) coded participants' responses to the memos on whether they employed the assigned goal, the to-be-ignored goal, both goals, or neither goal. They found that when participants' implemented goal (the goal they were coded as using in their responses) was accounted for, priming and negative priming effects were even stronger. Thus, when individuals responded to the memos using the goal they presumably felt most comfortable with, there were greater levels of activation and inhibition. These findings lead to the following hypothesis:

Hypothesis 3: Activation and inhibition effects will be stronger for the goal choice group than the goal assignment groups.

In addition to examining goal assignment and goal choice, the present investigation also examines the activation and suppression effects when participants are assigned two goals to optimize. In natural environments individuals encounter multiple goals that must be simultaneously attended to and negotiated. The inclusion of a dual goal assignment condition provides an opportunity to investigate how well information related to both goals is accessed, relative to neutral information. It may be that having two goals will place too many demands on working memory, leading to overall poorer performance and decreased activation of goal-related information. Alternatively, if working memory capacity is not a problem, then it is anticipated

that information related to both goals will experience heightened accessibility relative to neutral information.

Hypothesis 4: For the both-goals group, words related to both goals will be responded to faster than control words.

### Goal Preferences

One explanation for the participants' deviation from the assigned goal in Diefendorff et al. (1997) might relate to differences in the individual's preference for a particular management style (i.e., goal). If an individual has a strong preference for one goal (i.e., fairness) and is instructed to employ another (i.e., productivity), they will be required to contradict their preferred approach. When this occurs, the individual might be less likely to accept the goal or be committed to its success. Therefore, it is possible that an individual who is employing a goal that is contradictory to their preference will display smaller priming and negative priming effects than when employing the goal congruent with their preference. Under the goal choice condition, the individual may simply use their preferred goal across all trials. This will likely lead to stronger priming and negative priming effects, than those observed when participants are assigned a goal they do not prefer. In the condition where participants are assigned both goals, their personal preferences are not completely contradicted, but there may still be some conflict over having to employ the less-preferred goal at all. In this situation individuals may disproportionately employ their goal of preference, leading to stronger activation and suppression effects for that goal. Based on this logic, the following hypothesis is presented:

Hypothesis 5: Across conditions, activation and inhibition effects will be stronger when their goal preference is taken into account.

### Goal Completion

Marsh et al (1998) replicated the results of Goschke and Kuhl (1993) and also found that not only do intentions have an activating effect prior to completion of the goal, but once the intention had been performed, information related to the intention became deactivated or even inhibited (Marsh et al., 1998; Marsh et al. 1999). They explained their results such that once the individual has acted out their intentions, the heightened accessibility is no longer necessary and therefore subsides, even to the point of developing inhibition. Although not previously demonstrated, this same neutralizing effect may occur for suppressed information so that once a goal has been enacted, suppressed information returns to a neutral state of activation.

Marsh et al. (1998) and Marsh et al.'s (1999) findings suggest that the strength of activation and suppression effects will be stronger prior to goal completion. In contrast, Diefendorff et al. (1995) and Diefendorff et al. (1997) found activation and suppression effects even after goal completion. (1998). In light of this inconsistency, the proposed investigation will directly compare these two effects. While it is expected that the results of Diefendorff et al (1995) and Diefendorff et al. (1997) will be replicated, it may be that stronger effects will occur prior to goal completion, consistent with Marsh et al. (1998). In the current investigation, the participants' intention is to read and respond to an in-basket memo with a certain goal in mind, so the act of responding itself is the fulfillment of that intention. Therefore the activation and suppression effects will be assessed both prior to and after responding to the memo.

Hypothesis 6: The activation and inhibition effects will be stronger for trials when individuals respond to the items prior to goal completion.

## Method

### Participants

The participants in this study were 124 volunteers from LSU undergraduate psychology courses. Participants ranged in age from 18 to 54 ( $M=21.15$ ) and were between their first and sixth years of college ( $M=2.57$ ). Nineteen participants were men, 105 were women.

Participants were randomly assigned to one of three experimental conditions described below: 45 in the Goal Assignment condition, 39 in the Goal Choice condition, and 40 in the Both Goals condition. Participants were rewarded for participating with extra credit in their courses.

### Design

At the most general level, this is a 3 (Goal) x 2 (Task Order) x 4 (Word Type) mixed factorial design. Goal is a between subjects factor referring to whether the participant was (a) told to use only one goal and ignore a second goal in responding to the memos (Goal Assignment: alternating between productivity and fairness across trials), (b) told to choose the goal they wanted to use in responding to the memos for each trial (Goal Choice), or (c) told to use both goals simultaneously across all trials (Both Goals). Task Order is a within subjects variable referring to whether the lexical decision task was completed prior to or after goal completion (i.e., the writing of a response to the memo). Finally, Word Type is a within subject factor referring to whether the items responded to in the LDT were activated words (related to the assigned or chosen goal), inhibited words (related to the deliberately ignored or unselected goal), neutral words (unrelated to either goal), and non-words. In testing some hypotheses, Word Type will reduce to a 2-level variable including only activated and inhibited words. The reasoning for this will be discussed at a later point. In addition to these primary factors, this study will also examine the within-subject factors of goal type (productivity vs. fairness) and

item presentation (first item presentation vs. second item presentation), as well as a covariate (goal preference). These variables will be described in further detail below.

### Procedure

Participants first read and signed an informed consent form. The rest of the experimental session was completed on a personal computer using a program written in E-Prime software (version 1.0; Psychology Software Tools, Inc). During the session, participants first completed an in-basket task, which was used to test the primary hypotheses in the study and then completed a set of questionnaires. Finally participants were debriefed and awarded extra credit. The entire experimental session lasted 90 minutes.

For the in-basket task, participants were instructed to assume the role of a personnel manager of a large manufacturing facility. Prior to starting the task they read a brief description of the company and their role as personnel manager. They were then asked to read and respond to a series of eight memos describing various personnel problems submitted by employees in the company, starting with two practice memos (see Appendix B for a full listing of the memos). In addition to writing a response to each memo, individuals responded to a series of words/non-words in an LDT. The order of the LDT and written response varied randomly from memo to memo so that participants responded to the memo first and responded to the LDT first roughly an equal number of times.

Additionally, all participants were informed that there were two main strategies (or goals) that could be used to respond to the various personnel problems outlined in the memos: a productivity approach and a fairness approach. Productivity was defined as using a strategy that arrives at optimal levels of performance regardless of human factors. Fairness was defined as using a strategy that shows consideration and understanding to the workers, with less concern for



other factors in the company. These two management strategies were described as being somewhat opposite and often conflicting approaches to solving problems in the company. In the Goal Assignment condition, participants were assigned by the computer one of these two management strategies (and reminded of the definition of the goal) prior to reading each personnel problem and asked to use only that goal and to avoid using the ignored goal in developing their response. In the Goal Choice condition, participants were told to select one of the management strategies (by key press) prior to reading each of the memos, and to use only that strategy when developing their response. Participants in the Both Goals condition were asked to use both goals in developing their responses to all memos. That is, they were told to strike a balance between the two main strategies and develop solutions that take into account the concerns of the organization and the individuals.

Each trial first presented the goal information (either assigning one goal, assigning both goals, or asking individuals to choose one goal to use) and then presented a letter indicating the memo they were to read. Participants then searched through a stack of manila folders for the memo identified by the letter on the screen. Participants were instructed to read the memo carefully and fully develop their response in their head before continuing. Once their response to the memo was completely developed, participants pressed the spacebar to receive additional instructions to either write their response to the memo on a sheet of paper, or to respond to the LDT. If the LDT was first, participants wrote their responses to the memo second; and if the written response was first, participants responded to the LDT second (this is the Task Order manipulation). The order of these two tasks was random across trials. This resulted in 29 participants (24%) completing the LDT first and responding to the memo first an equal number of times. Eighty-eight participants (74%) completed the LDT first and the memo response first

on between 3 and 5 trials. Only 8 individuals (6.7%) completed the LDT first or the memo response first for only one trial.

Finally, after completing the LDT and the written responses, participants were asked to indicate on a 5-point scale the likelihood they would actually implement their suggested solution in a real world setting. This rating was obtained to get an indication of their level of commitment to the solution they developed. As a manipulation check, participants in the Goal Assignment and Goal Choice conditions were then asked to indicate which goal they actually used in developing their solution. In the Both Goals condition, participants were asked to indicate on a Likert-type scale to what extent his/her response favored productivity (1) or fairness (5).

### Materials

In-basket task. The in-basket task was based on the work of Diefendorff et al (1995). To further develop and refine the in-basket task the memos were modified and additional memos were written. This resulted in a total of 15 memos that were reviewed by a panel of three trained individuals to evaluate the clarity and content of the memos and also to consider the extent to which each memo was neutral in goal content (i.e., was not more amenable to a productivity or fairness solution). Each evaluator rated the memos twice on how related they were to both goals (1- unrelated, 5 – strongly related). A final set of eight experimental memos and two practice memos were selected for inclusion in the study based on low and roughly equal ratings on the two management strategies, suggesting that the memos did not favor one management style over the other. Additionally, the evaluator comments were used to revise and clarify the content of the final set of memos.

Lexical decision task. The purpose of the lexical decision task (LDT) was to assess the accessibility of goal-related information (prior to and after goal completion) for each memo. The LDT began with a brief set of instructions telling participants to indicate with a key press if the stimulus presented on the screen was a word or not (1 = word; 2 = non-word). For each memo, participants responded to a total of 18 stimuli, nine words (3 productivity, 3 fairness, 3 control) and nine non-words. Thus, the probability of a word or non-word was equal for each trial. Each stimulus presentation started with a pattern mask (1000 ms) followed by a focal point (1000 ms), and then the stimulus, which remained on the screen until the participant responded.

The productivity, fairness and neutral words were chosen based on the results of relatedness ratings collected from a separate sample of participants. Starting with the definitions of productivity and fairness used in this study, a list of 48 words (24 for each goal) were generated as being synonymous or highly related in meaning to the two goals. Additionally, 24 words considered to be unrelated to the two goal definitions were also identified.

The words were then rated twice by 265 participants on a 1-5 Likert-type scale in terms of their relatedness (1=unrelated, 5=strongly related) to both the productivity and fairness goals. Twelve words (available in Appendix A) from each category (productivity, fairness, control) were selected for inclusion in the study based on these ratings and an attempt to equate them across conditions on their number of letters (productivity words,  $M = 9.42$ ; fairness words,  $M = 7.58$ ; control words,  $M = 7.67$ ), number of syllables (productivity words,  $M = 3.25$ ; fairness words,  $M = 2.58$ ; control words,  $M = 2.92$ ), and their frequency of occurrence in the English language (productivity words,  $M = 45.083$ ; fairness words,  $M = 44.25$ ; control words,  $M = 39.16$ ) (Johansson & Hofland, 1989). With regard to the ratings, control words were chosen if the mean difference of ratings for both goals was non-significant (e.g., the word was not more

strongly related to one goal or the other). Goal-related words were selected if the ratings were high for one goal and low for the second goal, and the differences between the ratings were significant. Non-words were selected from a stimulus list used in a similar LDT task (Borowsky and Besner, 1993). For every real word chosen for use in this study, a non-word was selected with the exact same number of letters and number of syllables.

Goal preference. A short Likert-type scale (seen in Appendix C) was created to assess the participants' preference towards using a productivity or fairness goal. The measure consisted of a series of 8 statements asking participants to rate the degree to which s/he agreed with the statement on a 5 point Likert-type scale (1 = strongly disagree; 5 = strongly agree). Internal consistency reliability for the scale was .61.

## Results

### Data Screening and Outlier Analysis.

All reaction times were pooled over the eight LDTs. Prior to testing any substantive hypotheses, reaction time (RT) responses to the LDT were screened for accuracy and very long/short responses. Across all participants, 485 incorrect LDT responses were identified (individuals responded incorrectly that an item was a word or non-word) and excluded from further analyses. This resulted in the removal of a total of 152 (6.08%) RTs in the Goal Assignment condition, 163 (7.40%) RTs in the Goal Choice condition, and 170 (8.02%) RTs in the Both Goals condition. Additionally, RTs were excluded for trials where individuals reported that they used the wrong goal in the manipulation check at the end of each trial. Thirteen individuals made one such goal accuracy error resulting in the exclusion of 90 (3.38%) RTs in the Goal Assignment condition and 144 (2.56%) RTs in the Goal Choice condition. Four participants in the Goal Choice condition indicated using the wrong goal on several trials and

were excluded from further analyses. Additionally, RTs faster than 300 ms were excluded to eliminate the influence of very fast responses (possibly due to mechanical failure or random responding.). This resulted in the removal of 31 (0.18%) RTs across all participants. One participant from the Both Goals condition was dropped because a large percentage of his/her RTs were faster than 300 ms. Finally, RTs that were three standard deviations or more above the mean (in a within-subject analysis) were excluded, resulting in the removal of 349 (2.08%) responses. After cleaning up the data, 119 participants remained in the study: 45 in the Goal Assignment condition, 35 in the Goal Choice condition, and 39 in the Both Goals condition.

#### Across Conditions

A one-way within-subjects ANOVA for Word Type revealed a significant difference between Word Types (goal-related, control, and non-word) across Goal conditions ( $F_{1,236} = 57.617, p < .01$ ). Simple contrasts confirmed that the response latency for non-words differed from words, ( $t_{118} = -7.961, p < .001$ ) and goal-related words (productivity and fairness) differed from control words, ( $t_{118} = -6.238, p < .01$ ). This finding suggests a general activation effect for all goal-related words across conditions. Additionally, contrasts between activated, control and inhibited words were made for the Goal Assignment and Goal Choice conditions. In support of Hypothesis 1, the activated words (words related to the used goal) were responded to faster than the control words, ( $t_{118} = 6.434, p < .01$ ) (see Table 1). Contrary to Hypothesis 2, words related to the to-be-ignored goal were also responded to faster than the control words,  $t_{79} = 4.699, p < .01$ . Additionally, the RTs for activated words (words related to the used goal) and inhibited words (words related to the ignored goal) were not significantly different, ( $t_{79} = -.281, p = n.s.$ ), suggesting that in general, there was no difference in the activation levels of these two Word Types.

With regard to the non-significant Hypothesis 2 findings, it was originally assumed that activation and inhibition effects would be demonstrated relative to the control words, in a pattern consistent with the negative priming paradigm (May, et al., 1995) and the work of Diefendorff et al., (1997). While it is clear the results support an activation effect for goal-related words, there is little evidence of a true inhibition effect (words related to the to-be-ignored goal being slower than neutral words). The primary reason for this difference between the present investigation and that of Diefendorff et al. (1997) probably rests with the RT tasks used in the two studies. Specifically, Diefendorff et al. (1997) used a Word Naming Task, whereas the present investigation uses an LDT, which is probably a cleaner, more precise measure of the accessibility of information in long term memory. Thus, while there is no inhibition effect, as defined by the standard negative priming task, there is still the possibility of directly comparing the relative activation of words related to the attended-to goal with words related to the to-be-ignored goal. This approach is consistent with that of Marsh et al. (1998) and will be used for the remainder of the paper. Thus, when referring to activated and inhibited words, it will technically mean activated and less activated words, as it is impossible to tell if differences in RTs between these word types is due to differential activation or inhibition.

#### Goal Assignment Condition

All results of the ANOVAs for the Goal Assignment condition are available in Table 2, and all cell means are available in Table 4. Overall, consistent with the general findings, there is no support for a difference between the activated and inhibited words, ( $F_{1,43} = .024$ ,  $p = n.s.$ ). There is a significant main effect for Word Presentation (first presentation vs. second presentation) ( $F_{1,43} = 6.257$ ,  $p < .05$ ,  $\eta^2 = .124$ ), with individuals responding faster to the second viewing of the words. However, Presentation does not interact with Word Type, Task Order

(LDT first or written response first), or Goal, but there is a significant three-way interaction between Presentation, Goal and Word ( $F_{1,43} = 5.085$ ,  $p < .05$ ,  $\eta^2 = .104$ ). A glance at the means in Table 4 shows that activation effects only occur on the second word presentation for words related to the Productivity goal and for the first presentation of words related to the Fairness goal. (This finding is largely uninterpretable and will not be discussed further.)

There are no significant main effects for Task Order or Goal Type and neither interact with Word Type or each other (see Table 2), suggesting that reaction times are not faster for one goal type or the other or for responding to the LDT first or second, and that differences between the Word Types do not depend on either of these two factors. The lack of an interaction for Task Order and Word Type demonstrates no support for Hypothesis 6.

As suggested in Hypothesis 5, the difference in RTs between Word Types may depend on the extent to which the individual is pursuing a goal (and responding to words) that are consistent with their preferred goal. To examine this issue we re-analyzed all of the relationships discussed above with Goal Preference as a covariate. The logic in doing this is that activation and inhibition effects may be particularly likely to occur when an individual is pursuing a goal that is consistent with their preferred way of handling situations. In contrast, when an individual is pursuing a goal they do not believe in, there may be no differences between Word Types or even the opposite pattern of findings (i.e., the to-be-ignored goal may still have a higher degree of activation even though they are instructed to pursue the other goal).

With preference included as a covariate (see Table 3), there is now a significant Task Order by Word Type Interaction ( $F_{1,43} = 5.835$ ,  $p < .05$ ;  $\eta^2 = .119$ ) such that when participants write their responses to the memos before performing the LDT (in essence completing the goal), activated words (estimated mean = 705.42 ms) are slower than inhibited words (estimated mean =

703.76 ms). In contrast, when participants respond to the LDT before completing the goal, activated words (estimated mean = 708.154 ms) are significantly faster than inhibited words (estimated mean = 733.189 ms) (see Table 5). This pattern of findings is exactly what Marsh et al. (1998) found. Specifically, an activation effect occurred prior to goal completion and inhibition actually occurred for information related to the intended goal when the goal was complete. It is important to note that this effect only occurred after the effects of goal preference were accounted for. All other main effects and interactions with preference as a covariate remained non-significant.

### Goal Choice

In the condition where participants were required to choose one of the two goals for each memo, 15 participants (43%) chose to use the productivity goal and the fairness goal an equal number of times, 10 chose to use fairness more than half the time, and 10 chose to use productivity more than half the time. As was found in the Goal Assignment condition, there was no significant difference in the RTs for activated and inhibited words (see Table 6). In addition, Goal and Task Order did not have significant main effects or interactions with Word Type (see Table 6). As with the Goal Assignment condition, Presentation did have a significant effect ( $F_{1,33} = 23.185$ ,  $p < .01$ ,  $\eta^2 = .405$ ) with the second response to the words being faster, but there was no significant interaction with any other factors.

Including the Goal Preference measure as a covariate did not alter the difference between activated and inhibited words or their interaction with Task Order or Goal. Interestingly, after including Goal Preference as a covariate, there was a significant three-way interaction between Presentation, Order, and Word Type ( $F_{1,26} = 5.353$ ,  $p < .05$ ;  $\eta^2 = .171$ ), such that during the first presentation of words, activated words are responded to slower than inhibited words across both



Task Order conditions, but with a larger effect when the LDT is presented after goal completion. In addition, for the second word presentation, activated words are responded to much faster than inhibited words for both Task Orders, with a larger effect occurring when the LDT is presented after goal completion. (see Table 9).

### Comparing the Goal Assignment and Goal Choice Conditions: Test of Hypothesis 3

Hypothesis 3 directly compares the Goal Assignment and Goal Choice conditions, suggesting that the activation and inhibition effects (difference between ignored and attended-to goal information) should be stronger in the Goal Choice Condition. The logic behind this hypothesis is based on the work of Latham and Locke (1991) who suggest that commitment will be higher when an individual has a choice about the goal to pursue, and that attentional processes will be more prominent under these conditions. This is true because they will experience less conflict in pursuing the goal and greater feelings of control and autonomy. Interestingly there is a main effect for condition ( $F_{1,78} = 8.403, p < .01$ ) with the Goal Choice condition having significantly faster RTs. Upon examining all other factors between these two conditions, both with and without preference as a covariate, there are no significant main effects or interactions.

### Both Goals

In the Both Goals condition, participants were required to use Both Goals in developing responses to all memos, suggesting that all goal-related words should experience activation and be responded to faster than control words. This was supported by the findings of a repeated measures ANOVA ( $F_{1,38} = 9.742, p < .01, \eta^2 = .204$ ) wherein goal-related words ( $M = 692.71$ ) were responded to significantly faster than neutral words ( $M = 731.83$ ). Examining Presentation and Task Order revealed significant main effects but no interactions (see Table 10 for ANOVAs and Table 12 for cell means). The most interesting finding here, is a significant Presentation by

Task Order by Word Type interaction ( $F_{1,30} = 7.523$ ,  $p < .05$ ,  $\eta^2 = .200$ ), such that during the first presentation, activated words are responded to faster than control words for both writing the response first and performing the LDT first. However, during the second presentation, when writing the response first activated words are actually responded to slower than control words, and when participants completed the LDT first, activated words were again faster than control words (see Table 12 for cell means). This is consistent with the predictions of Hypothesis 6. In the presence of the preference covariate, the Both Goals condition yielded only significant main effects for Task Order and no significant interactions (see Table 11).

### Discussion

In general, results do not support the presence of goal-related activation and inhibition and fail to replicate the findings of Diefendorff et al. (1995; 1997) and Marsh, et al., (1998; 1999). The most noteworthy finding was the interaction between Task Order and Word Type, when controlling for Goal Preference in the Goal Assignment condition. Specifically, we found that in the Goal Assignment condition when participants wrote their response to the memo prior to completing the LDT task the activated words were in fact responded to slightly slower than the inhibited words. This condition is identical to the one used in Diefendorff et al (1997) and we found results consistent with Marsh et al (1999). However, when participants completed the LDT before writing their response, activated words were responded to much faster than inhibited words (see Table 4). This finding suggests that activation of goal-relevant information is greater than competing goal information only until goal completion. At that point, previously goal-related information is deactivated and exhibits RTs slower than previously ignored goal words. This finding depends on including the person's goal preference as a covariate, suggesting that in this condition these effects occur only when a person's preference is taken into account.

Additional support for this idea was found in the Both Goal condition such that during the first presentation, activated words are responded to slower than control words across both Task Orders. However, in the second presentation, when completing the response first, activated words continue to be responded to slower than control words, while in the LDT first condition, activated words are responded to much faster than control words. This is also consistent with the findings of Marsh et al (1999) supporting the hypothesis that activation of goal-related information relative to neutral information exists only prior to completion of that goal. It should be noted however that contrary to the previously discussed effect of Task Order in the Goal Assignment condition, in this instance, the effect was only found in the absence of the preference covariate. This potentially results from the participants in the Both Goals condition never being forced to completely employ a goal contrary to their preference, therefore alleviating the effects of the preference covariate. Future research should seek to explain this inconsistency.

However, the overall lack of significant differences between activated and inhibited words suggests there was little effect across experiment conditions. Two possible reasons for the lack of an effect concern the design of the study and the level of activation of the goal-related information induced by the manipulation. First, it is possible that the thorough and extensive review of the definition of both goals at the beginning of the study could have resulted in a general activation effect of all goal-related information that outweighed the activation occurring during pursuit of a goal for one memo. Additionally, for the Goal Assignment condition, having participants alternate between using both goals may have resulted in a constant high level of activation of all goal-related information. Thus, participants may not have experienced a deactivation of goal-related information when a trial was complete. Perhaps, being assigned only one goal across a larger number of memos (perhaps in a between subjects design) would

result in stronger activation and inhibition effects over trials. However, this explanation does not apply as well to the Goal Choice condition where participants could freely select the goal they wanted to use. An additional explanation could be that because there was a relatively few number of items for each of the LDT tasks, compared to the LDTs used in Marsh et al. (1999), there may not have been enough trials for significant differences in activation and inhibition to occur.

It may also be the case that participants did not take the task seriously and did not employ the goal they were assigned or chose. That is the manipulation may not have been strong enough to induce activation of goal-related information and suppression of information related to the “to-be-ignored-goal.” One way to further examine this issue is to examine participants’ reported level of commitment to the solutions. If individuals were highly involved in the task and believed in the solution they developed, the level of activation may be higher than for someone who provides a flip answer that does not employ a particular management strategy. This also suggests that examining the content of individuals written responses may shed light on the extent to which the assigned goal was actually used in developing solutions.

With regard to the Goal Choice condition in particular, it was expected that activation and inhibition effects would be particularly large. The finding of no effect for these individuals may be due to individuals in fact having a less clear goal and a greater sense of discretion about the extent to which they could use the goal. That is, the lack of an assigned goal may have empowered individuals to utilize whatever strategy they desired, regardless of what they outwardly claimed to be pursuing. Goal setting theory suggests that having a detailed, and narrowly focused goal is directly related to heightened performance (Latham and Locke, 1991). It might be the case that the task design of the Goal Assignment condition came closer to

providing this type of narrow focus whereas the Goal Choice and Both Goal conditions resulted in the participant employing a broader and more general approach. Attempts to make all conditions equally focused with more specific expectations for performance, could mediate this difference in condition. This less-directed atmosphere of the Goal Choice condition could also result in the participant feeling free to be diverted from the goal-strategy s/he chose prior to actually reading the memo. Any particular situation might evoke a specific response from a participant in one way or other, suggesting the use of the abandoned goal, despite having committed to using the other.

Finally, it is possible that this study's approach to measuring preference for one goal over another ignores the possibility of both goals having equal levels of importance within individuals' hierarchical system of goals. That is, some individuals might find the concepts of fairness to the individual and productivity of the company equally important, but in different situations. For example, if a manager is considering granting an employee's request for leave to catch an early movie, productivity might be a priority. Whereas, if the employee was requesting leave to see a child's school play, fairness might be a more pressing issue. It might therefore be more useful to uncover which goal strategy the participant finds most appropriate for any give situation, rather than seeking out an overall preference for one goal or the other.

In conclusion, little support was found for the presence of goal-related activation and inhibition under the conditions of this study. Further research is needed to continue to develop this method of observing how goals serve as a source of the micro-level information processes of activation and inhibition.

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Table 1  
Means for Word Types across conditions

Word Type	<u>M</u>	<u>SD</u>	<u>n</u>
Goal-related Words	681.242	137.830	119
Control Words	727.406	172.6513	119
Non Words	849.000	288.1209	119
Activated Words	680.728	135.760	119
Inhibited Words	676.575	145.540	80

Table 2  
Goal Assignment Condition: repeated measures ANOVA

Factors	d.f.	F Ratio	p	Eta2
Word Type*	1,43	.024	.878	.001
Word Type**	3,43	33.838	.000	.435
Goal (G)	1,43	.369	.547	.008
Word Type (W)*	1,43	.000	.993	.000
G x W	1,43	1.437	.237	.032
Presentation (P)	1,43	6.257	.016	.124
Word Type (W)	1,43	.009	.925	.000
P x W	1,43	.127	.724	.003
Task Order (O)	1,43	1.204	.279	.027
Word Type (W)*	1,43	1.145	.290	.025
O x W	1,43	1.147	.290	.025
Goal (G)	1,43	.308	.582	.007
Presentation (P)	1,43	9.087	.004	.171
Word Type (W)*	1,43	.002	.965	.000
G x P	1,43	.194	.662	.004
G x W	1,43	1.059	.309	.023
P x W	1,43	.059	.809	.001
G x P x W	1,43	5.085	.029	.104
Goal (G)	1,43	.809	.375	.025
Task Order (O)	1,43	.603	.443	.019
Word Type (W)*	1,43	1.208	.280	.038
G x O	1,43	.724	.401	.023
G x W	1,43	1.69	.202	.052
O x W	1,43	1.027	.319	.032
G x O x W	1,43	1.242	.274	.039
Presentation (P)	1,43	5.006	.031	.116
Task Order (O)	1,43	.822	.370	.021
Word Type (W)*	1,43	.000	.999	.000
P x O	1,43	2.194	.147	.055
P x W	1,43	.053	.819	.001
O x W	1,43	2.283	.139	.057
P x O x W	1,43	1.332	.256	.034

\* Activated words vs. Inhibited words

\*\* Activated words x Inhibited words x Control words x Non-words

Table 3

Goal Assignment Condition with Preference Covariate: repeated measures ANOVA

Factors	d.f.	F Ratio	p	Eta2
Word Type*	1,43	.714	.403	.016
Word Type**	3,43	.613	.608	.014
Goal (G)	1,43	1.241	.271	.028
Word Type (W)*	1,43	.640	.428	.015
G x W	1,43	.608	.440	.014
Presentation (P)	1,43	.016	.901	.000
Word Type (W)	1,43	1.071	.309	.024
P x W	1,43	.004	.835	.001
Task Order (O)	1,43	.011	.918	.000
Word Type (W)*	1,43	1.496	2.28	.034
O x W	1,43	5.835	.020	.119
Goal (G)	1,43	1.199	.280	.027
Presentation (P)	1,43	.007	.935	.000
Word Type (W)*	1,43	.657	.422	.015
G x P	1,43	.449	.506	.010
G x W	1,43	.490	.488	.001
P x W	1,43	.112	.739	.003
G x P x W	1,43	.164	.687	.004
Goal (G)	1,43	1.857	.183	.058
Task Order (O)	1,43	.636	.431	.021
Word Type (W)*	1,43	.470	.498	.015
G x O	1,43	.048	.828	.002
G x W	1,43	1.981	.170	.062
O x W	1,43	9.344	.005	.237
G x O x W	1,43	1.737	.197	.055
Presentation (P)	1,43	.001	.979	.000
Task Order (O)	1,43	1.183	.284	.031
Word Type (W)*	1,43	2.068	.159	.053
P x O	1,43	.519	.476	.014
P x W	1,43	1.898	.177	.049
O x W	1,43	5.510	.024	.130
P x O x W	1,43	.010	.921	.000

\* Activated words vs. Inhibited words

\*\* Activated words x Inhibited words x Control words x Non-words

Table 4  
Goal Assignment Condition Means

Word Type	<u>M</u>	<u>SD</u>
Goal Related	713.0662	160.4505
Fairness Related	704.7645	163.7837
Productivity Related	720.9175	168.7478
Control	765.0929	195.6545
Non-words	877.4705	252.0923
Activated Words	712.4465	154.3196
Inhibited Words	713.9469	173.4887

N = 45

Goal by Presentation

Presentation	Word Type	Productivity			Fairness		
		N	<u>M</u>	<u>SD</u>	N	<u>M</u>	<u>SD</u>
1 <sup>st</sup> Presentation	Activated Words	45	752.1070	212.9225	45	713.4385	153.4882
	Inhibited Words	45	719.6707	204.9580	45	752.1326	199.9493
2 <sup>nd</sup> Presentation	Activated Words	45	693.1174	188.3755	45	687.9679	162.2312
	Inhibited Words	45	697.7207	214.4677	45	678.7659	178.1469

Goal by Task Order

Task Order	Word Type	Productivity			Fairness		
		N	<u>M</u>	<u>SD</u>	N	<u>M</u>	<u>SD</u>
Respond 1 <sup>st</sup>	Activated Words	41	714.3142	193.9284	44	686.8495	134.8805
	Inhibited Words	41	700.7394	193.2097	44	703.7872	152.0486
LDT 1 <sup>st</sup>	Activated Words	42	716.2035	175.8676	40	700.4164	196.2207
	Inhibited Words	42	716.3151	215.6246	40	751.1112	254.0176

Table 5  
Estimated Means for Goal Assignment condition with Preference covariate

Word Type	<u>M</u>	<u>SE</u>
Control	765.093	29.109
Non-words	877.471	36.593
Activated Words	712.447	23.023
Inhibited Words	713.947	26.073

N = 45

Task Order	Word Type	<u>M</u>	<u>SE</u>
Respond 1 <sup>st</sup>	Activated Words	705.416	21.400
	Inhibited Words	703.764	23.332
LDT 1 <sup>st</sup>	Activated Words	708.154	25.161
	Inhibited Words	733.189	32.239

N=45

Table 6  
Goal Choice Condition: repeated measures ANOVA

Factors	d.f.	F Ratio	p	Eta2
Word Type*	1	.106	.747	.003
Word Type**	3	10.547	.000	.237
Goal (G)	1,33	.948	.338	.031
Word Type (W)*	1,33	.038	.847	.001
G x W	1,33	1.579	.219	.050
Presentation (P)	1,33	23.185	.000	.405
Word Type (W)	1,33	.018	.895	.001
P x W	1,33	.392	.535	.011
Task Order (O)	1,33	.355	.555	.010
Word Type (W)*	1,33	.085	.773	.002
O x W	1,33	.227	.637	.007
Goal (G)	1,24	.013	.909	.001
Presentation (P)	1,24	18.119	.000	.420
Word Type (W)*	1,24	.000	.989	.000
G x P	1,24	.002	.965	.000
G x W	1,24	.027	.871	.001
P x W	1,24	.552	.465	.022
G x P x W	1,24	.187	.670	.007
Goal (G)	1,17	1.627	.218	.083
Task Order (O)	1,17	.388	.541	.021
Word Type (W)*	1,17	1.325	.265	.069
G x O	1,17	.041	.842	.002
G x W	1,17	.033	.858	.002
O x W	1,17	.000	1.000	.000
G x O x W	1,17	2.629	.122	.127
Presentation (P)	1,26	15.490	.001	.365
Task Order (O)	1,26	.043	.837	.002
Word Type (W)*	1,26	.049	.826	.002
P x O	1,26	.456	.505	.017
P x W	1,26	1.427	.243	.050
O x W	1,26	.006	.938	.000
P x O x W	1,26	.034	.855	.001

\* Activated words x Inhibited words

\*\* Activated words x Inhibited words x Control words x Non-words

Table 7

Goal Choice Condition with Preference Covariate: repeated measures ANOVA

Factors	d.f.	F Ratio	p	Eta2
Word Type*	1,33	.021	.885	.001
Word Type**	3,99	.303	.823	.009
Goal (G)	1,33	.070	.793	.002
Word Type (W)*	1,33	1.558	.222	.051
G x W	1,33	1.264	.270	.042
Presentation (P)	1,33	.135	.716	.004
Word Type (W)	1,33	.008	.931	.000
P x W	1,33	.035	.853	.001
Task Order (O)	1,33	.372	.546	.011
Word Type (W)*	1,33	.583	.451	.017
O x W	1,33	.000	.997	.000
Goal (G)	1,24	.077	.783	.003
Presentation (P)	1,24	.166	.687	.007
Word Type (W)*	1,24	.798	.381	.032
G x P	1,24	.002	.968	.000
G x W	1,24	.077	.783	.003
P x W	1,24	.071	.793	.003
G x P x W	1,24	.820	.374	.033
Goal (G)	1,17	.1400	.253	.076
Task Order (O)	1,17	.048	.829	.003
Word Type (W)*	1,17	.911	.353	.051
G x O	1,17	.000	.992	.000
G x W	1,17	3.008	.101	.150
O x W	1,17	.017	.898	.001
G x O x W	1,17	1.109	.307	.061
Presentation (P)	1,26	.669	.421	.025
Task Order (O)	1,26	.035	.854	.001
Word Type (W)*	1,26	.635	.433	.024
P x O	1,26	1.677	.207	.061
P x W	1,26	3.736	.064	.126
O x W	1,26	.072	.791	.003
P x O x W	1,26	5.328	.029	.170

\* Activated words vs. Inhibited words

\*\* Activated words x Inhibited words x Control words x Non-words

Table 8  
Goal Choice Condition Means

Word Type	<u>M</u>	<u>SD</u>
Goal Related	627.5507	76.8008
Fairness Related	630.3121	82.7439
Productivity Related	624.9241	75.4882
Control	674.0224	103.1626
Real Words	643.2018	80.0614
Non-words	778.2165	260.3615
Activated Words	626.5983	79.8521
Inhibited Words	628.5255	77.7236

N = 35

Presentation	Item Type	<u>M</u>	<u>SD</u>
1 <sup>st</sup> Presentation	Activated Words	655.8542	101.5791
	Inhibited Words	653.7327	94.2699
2 <sup>nd</sup> Presentation	Activated Words	614.0569	72.2255
	Inhibited Words	617.8820	74.9629

N=35



Table 9

Estimated Means of Goal Choice condition with Preference covariate

Word Type	<u>M</u>	<u>SE</u>
Control	674.022	17.612
Non-words	778.217	44.267
Activated Words	626.598	13.672
Inhibited Words	628.526	13.290

N = 35

## Presentation by Task Order

Task Order	Word Type	1 <sup>st</sup> Presentation			2 <sup>nd</sup> Presentation		
		N	<u>M</u>	<u>SE</u>	N	<u>M</u>	<u>SE</u>
Respond 1 <sup>st</sup>	Activated Words	28	674.769	22.337	28	598.465	12.335
	Inhibited Words	28	666.971	18.627	28	610.945	16.524
LDT 1 <sup>st</sup>	Activated Words	28	666.474	23.189	28	605.107	15.633
	Inhibited Words	28	660.938	23.023	28	613.431	17.537

Table 10  
Both Goals Condition: repeated measures ANOVA

Factors	d.f.	F Ratio	p	Eta2
Word Type*	1,38	9.742	.003	.204
Word Type**	2,76	20.785	.000	.354
Presentation (P)	1,38	11.104	.002	.226
Word Type (W)	1,38	7.434	.010	.164
P x W	1,38	1.242	.272	.032
Task Order (O)	1,38	5.694	.022	.130
Word Type (W)*	1,38	9.167	.004	.194
O x W	1,38	2.908	.096	.071
Presentation (P)	1,30	8.594	.006	.223
Task Order (O)	1,30	2.975	.095	.090
Word Type (W)*	1,30	7.152	.012	.193
P x O	1,30	3.307	.079	.099
P x W	1,30	.125	.727	.004
O x W	1,30	1.843	.185	.058
P x O x W	1,30	7.523	.010	.200

\* Activated words x Control words

\*\* Activated words x Control words x Non-words

Table 11

Both Goals condition with Preference covariate: repeated measures ANOVA

Factors	d.f.	F Ratio	p	Eta2
Word Type*	1,36	.202	.656	.006
Word Type**	2,76	1.538	.222	.041
Presentation (P)	1,36	.982	.328	.027
Word Type (W)	1,36	.287	.596	.008
P x W	1,36	.245	.624	.007
Task Order (O)	1,36	4.885	.034	.119
Word Type (W)*	1,36	1.495	.229	.040
O x W	1,36	.246	.623	.007
Presentation (P)	1,28	.182	.673	.006
Task Order (O)	1,28	3.318	.079	.106
Word Type (W)*	1,28	1.552	.223	.053
P x O	1,28	.657	.424	.023
P x W	1,28	.173	.680	.006
O x W	1,28	.461	.503	.016
P x O x W	1,28	.005	.943	.000

\* Activated words x Control words

\*\* Activated words x Control words x Non-words

Table 12  
Both Goals Condition Means

Item Type	<u>M</u>	<u>SD</u>
Control	731.8293	185.4429
Activated Words	692.7060	141.1192

N = 39

Presentation	Word Type	<u>M</u>	<u>SD</u>
1 <sup>st</sup> Presentation	Control	749.2449	202.5548
	Activated Words	709.2830	160.9244
2 <sup>nd</sup> Presentation	Control	714.3819	176.1360
	Activated Words	689.1463	137.8968

N = 39

Task Order	Word Type	<u>M</u>	<u>SD</u>
Respond 1 <sup>st</sup>	Control	706.4306	184.6122
	Activated Words	691.6407	159.5893
LDT 1 <sup>st</sup>	Control	749.9620	194.0280
	Activated Words	697.4308	141.8768

N=39

Presentation by Task Order

Task Order	Word Type	1 <sup>st</sup> Presentation			2 <sup>nd</sup> Presentation		
		N	<u>M</u>	<u>SD</u>	N	<u>M</u>	<u>SD</u>
Respond 1 <sup>st</sup>	Control	35	749.4099	227.5604	39	671.3537	141.6882
	Activated Words	39	702.6033	166.3304	39	677.1343	143.0372
LDT 1 <sup>st</sup>	Control	38	744.6968	200.7763	36	764.6110	205.1343
	Activated Words	38	713.9318	172.2783	36	681.3151	130.6522

## Appendix A: Word Types

Fairness Words

sympathy  
 mercy  
 generous  
 gracious  
 humane  
 courteous  
 justice  
 individual  
 truthful  
 faithful  
 person  
 tolerant

Productivity Words

quality  
 skilled  
 effective  
 functional  
 labor  
 management  
 organization  
 professional  
 quantity  
 industrious  
 output  
 profit

Neutral Words

temptation  
 issue  
 historical  
 literary  
 mysterious  
 immune  
 entirely  
 nation  
 sober  
 precedent  
 darkness  
 distorted

Nonsense Words

passette  
 thrig  
 birbateestat  
 pedirs  
 ottauncank  
 melitoker  
 leconol  
 donsonent  
 rishong  
 lavemont  
 onnocant  
 deptemper  
 balue  
 queep  
 porest  
 taricle  
 zagamine  
 thafer  
 casend  
 saugh  
 lasebalb  
 pereponip  
 fustard  
 chobrure  
 shattlebith  
 spocalism  
 nonmican  
 jabinolipser  
 nissecks  
 cocobact  
 voercing  
 nourtcy  
 goniferger  
 durythas  
 sivion  
 ecoration

## Appendix B: Memo List

A To: Chris Green, Human Resources  
From: Nicky Harper, Cutting Room Supervisor  
Subject: Overtime for Jonathan Stohlman

I have a concern about a situation that has developed with one of my operators, Jonathan Stohlman. He has requested overtime on a number of occasions but I have been unable to give him any, especially since top management wants us to cut back on overtime hours. A new operator, Alice Rains, gets overtime regularly because she is still learning and needs more time to meet her quota and fix mistakes. Jonathan has complained about her receiving extra hours before him, saying that he is getting punished for working fast and she is getting rewarded for making mistakes and working slow. I explained to him the reasons Alice needs the extra hours and that he couldn't take any of her hours anyway because she works with different materials than him. He still seems upset and keeps saying that he needs the overtime. In light of all this, I find it very awkward to tell him no. Any recommendations?

B To: Chris Green, Human Resources  
From: Jess Collins, Sewing Room Supervisor  
Subject: Vacation for Sarah Keator

As you know, in the late summer months we have to begin production of our winter line. There are only two people in this plant who are trained on the equipment to make the cuffs for long sleeve shirts. Sarah Keator is one of them, and Gloria Stephens is the other. The first week I started as Cutting Room Supervisor, Gloria came to me and asked for 2 weeks off to help with her sister's wedding in August, and I granted it. That same day, Sarah informed me that she also had planned to take her vacation in August to take her kids to visit their grandparents and had received verbal approval to do so from Don Ritzman before he transferred. There is no written documentation of Don's approval, and he never mentioned it to me, but I believe Sarah is telling the truth. I'm not sure what to do. Production will fall behind if they both go, but it doesn't seem right to make either of them skip their vacation. What do you think?

C To: Chris Green, Human Resources  
From: Rod Ferner  
Subject: Spencer Reiley Performance Review

I've just finished my quarterly reviews of all my employees. Spencer Reiley, who in the past was one of my best employees, has been rated unsatisfactory the past two quarters. I've tried to talk to him about his poor performance, but he just clams up. I hate to fire him, but his job is an important one and it's critical that it be done well. I think these changes may be because of some family problems he's been having lately. I've heard his wife has been fooling around on him and neglecting their children. Steve Brown says he is really tore up about all of this and thinks he might be depressed. Although termination is the standard for ratings this low, I'm not sure if firing him is the right thing to do. Do you have any other suggestions?

D To: Chris Green, Human Resources  
From: Justin Campos  
Subject: Employee altercation

Chris, please advise me on this situation. Two of my employees, John and Bill, were caught fighting with each other yesterday. According to a witness, John was verbally harassing Bill about a personal problem. Bill got upset and took a swing, and then a fight ensued. I came in at this point and broke it up. I know that according to company policy, fighting is reason for dismissal. My problem is that Bill is an outstanding employee and I don't want to lose him. On the other hand, John is a below average performer, so my department's performance wouldn't suffer if I fired him. I'd like to fire John and just warn Bill, but I'm not sure this is right. Do you have any other suggestions?

E To: Chris Green, Human Resources  
From: Carmen Jones, Custodial Supervisor  
Subject: Bessie Simms

I have a concern about one of my custodians, Bessie Simms. She's 67 years old and in pretty good shape for her age, save some arthritis. She's been sweeping the cutting room floor now for the past 18 years. As you know, a job rotation program was recently started where employees take turns doing different jobs, rotating on a weekly basis. Now, for the first time in 18 years we've asked her to clean the restrooms and haul the trash to the compactor. She never said a word about it to me, but it's obvious that she's too old to get on her knees to scrub and lift heavy trash crates. So lately, I've been skipping her when it came to

making the schedule for these tougher jobs. A couple of the other employees have noticed this and complained. Policy says we have to let her go if she can't do her share. Can you help me resolve this issue?

F To: Chris Green, Human Resources  
From: Cal Martin, Security  
Subject: Theft

I have just finished the quarterly report for the shipping department and I'm disturbed to see that there has been an alarming increase in theft. Past studies show that 65% of these thefts are due to employees, and 35% to outsiders. Although I have no solid proof, the paper trail seems to point to one particular loading dock. Now, I have interviewed the men who work in that area, and most of them seemed genuinely surprised by my questioning. Protocol says if I can't pinpoint anyone the whole team goes. Do you have any recommendations as to how we should proceed?

G To: Chris Green, Human Resources  
From: Sarah Miller, Consultant  
Subject: Efficiency Results

I have completed my study of your design department and am pleased to say that on average, this area received the highest efficiency rating. The individual performance analysis also revealed several strong performers, with the exception of Stanley Moorhouse, who consistently has high waste rates and fewer garments per hour. There are reports that he is regularly handling personal matters on work time and difficult to work with. On the other hand, Stanley has had some of the most innovative suggestions in recent years, leading to the design of three of your best selling shirts. I know this presents something of a predicament, but I thought this information would be useful.

H To: Chris Green, Human Resources  
From: Tonya Dickson, Accounting Clerk  
Subject: Kelly Thomas, Accounting Intern

Kelly Thomas was selected for an internship in the accounting department. Most of the time that she has been working with us she has been doing endless data entry for the fiscal year inventory. Last week the head accountant panicked and hired a temp to help with the last minute entry. Kelly spent half a day explaining to her what we were doing and how to help finish the data entry. In talking to one another, Kelly found out that the temp is being paid nearly double her rate to do the same job. Now Kelly understands that the temp is paid through the temp agency and not our company, but she is really disgruntled, given that she has more knowledge, skills, and experience than the temp. Kelly's a very talented young lady, and she's been a big help in the department. I'd hate to see us lose her over this.

#### Practice Memo 1

To: Chris Green, Human Resources  
From: George Barros, Loading Dock Supervisor  
Subject: Samantha Hartford

We recently hired 3 part-time college students to help in the late afternoons with the outgoing orders. One of the new employees is an athletic young woman who said she wanted the job for the good pay and exercise. She works hard, shows up on time, and follows directions well. Unfortunately, I have noticed that work has slowed down back here. When the guys aren't following her every move, they're literally falling over themselves to help her with her work. She doesn't seem to mind, and no one is being at all harassing, but it is quite obvious that she is a distraction and our trucks aren't being loaded as fast as they could be. Do you have any suggestions?

#### Practice Memo 2

To: Chris Green, Human Resources  
From: Paul Stanton, Manufacturing V.P.  
Subject: Union Organizer

Both Gebbs and I have heard reports that one or more union organizers are meeting at various times with some of the younger, more disgruntled employees about unionizing the company. You know we couldn't survive with this old plant and equipment if we had to pay union wages and benefits. And I'm sure you are aware of the pressures that the board is putting on us to increase dividends. On one hand I can sympathize with these workers, (the pay is better elsewhere), but my from an administrative standpoint, I know this could break us. What should we do?



## Appendix C: Preference Scale

For the following statements, use the scale provided to indicate the extent to which you agree with each statement. Circle the number corresponding to your level of agreement.

strongly disagree	disagree	no opinion	agree	strongly agree
1	2	3	4	5

1. In general, when resolving a dispute, I would rather side with the organization over an individual employee.
2. In a work environment, priority should be given to meeting production demands over keeping workers happy and comfortable.
3. If I had to choose, the outcomes of my decisions would generally favor the individual employee over the company's objectives.
4. When at work, meeting production goals of the company takes precedence over meeting individual needs.
5. When at work, meeting individual needs is more important than sticking to the rules of the organization.
6. When in a leadership position, it is best to make decisions about people on a case by case basis.
7. When making decisions about people it is best to apply the same rules and policies to everyone, regardless of individual circumstances.
8. The needs of individual workers should not interfere with achieving organizational goals.