

1951

# A quantitative analysis of grammatical categories as a measure of dominance

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## CHAPTER I

### THE PROBLEM AND ITS SETTING

Layman and scientist alike have generally felt that there is an intricate relationship between language and personality. In attempts to demonstrate this, various investigators have subjected verbal behavior to both qualitative and quantitative analysis. The qualitative approach has yielded more significant results, comparatively, than the quantitative. Since the latter, however, has not been very frequently employed, unexplored possibilities exist that may yield further evidence in support of the hypothesis that there is a close connection between language and personality. The need for research with the quantitative method is therefore indicated.

#### I. THE PROBLEM

The specific problem of the present research was to examine quantitatively certain grammatical categories as measures of an attitude, namely, degree of dominance.

#### II. GENERAL BACKGROUND OF THE PROBLEM

Language may be conceptualized as comprising a series of interrelated symbols to express and communicate ideas,

emotions, and desires. Gray<sup>1</sup> seems to reflect this view in his interpretation of language as the material representation of what is essentially immaterial, namely, the emotional, intellectual and spiritual states. Thoughts, emotions, and desires are commonly considered to be tension expression and tension-reducing processes. Personality may be regarded as the pattern of tension-reducing processes that characterize the individual. The intimate association of language with personality lies, therefore, in the fact that language consists of the symbolic representations of thoughts, emotions, and desires which compose the pattern of tension-reducing processes that constitutes personality. It follows, therefore, that the analysis of verbal behavior should yield much which reflects the nature of personality.

Many investigators are in accord with this conclusion. Sapir<sup>2</sup> has stated that language habits, such as the quality of voice, phonetic patterns, and rate of speech, are indicators of personality and that personality is largely reflected in the choice of words. Frank says that, "Through language we are able to approach the other person's private

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1 Louis H. Gray, Foundations of Language (New York: Macmillan, 1939), p. 15.

2 Edward Sapir, "Speech as a Personality Trait," American Journal of Sociology, 32:892-905, May 1927.

world and idiomatic personality processes."<sup>3</sup> The words we choose to express our thoughts, assert Pillsbury and Meader,<sup>4</sup> are determined by the group of associates which are usually subconscious; the words are organized by our thoughts and intentions. According to the Philologist Grim, speech is a storehouse of our wishes, frustrations, intentions, and values. One of the theories of the origin of language, the Interjectional Theory, claims that speech is derived from interjections which express and communicate emotions. Examples of this include the "ah" and "oh" of surprise, the "ow" of pain, the "e-e-e" of fright or joy. These statements support the hypothesis that language is an expression of personality.

A more specific study, an analysis of written language by Williams,<sup>5</sup> found that sentences from G. B. Shaw's and G. K. Chesterton's books each had a peculiar stylistic trait (sentence length). The stylistic trait is a function of both the personality and the nature of the material. Since both of these authors wrote in similar fields, it is

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<sup>3</sup> Lawrence K. Frank, Projective Methods (Springfield, Illinois: Thomas Publishing Company), p. 59.

<sup>4</sup> Walter Pillsbury and Clarence Meader, The Psychology of Language (New York: Appleton Century, 1928), p.4.

<sup>5</sup> Clarence B. Williams, "A Note on the Statistical Analysis of Sentence Length as a Criteria of Literary Style," Biometrika, 31:356-361, 1940

quite plausible to say that Williams demonstrated that there are individual differences in the stylistic traits of written behavior. Young's results<sup>6</sup> indicate another type of relationship between personality and speech. She found a correlation between the socio-economic level of the parents and the sentence length of the speech of the child.

Stuttering, as a particular language phenomenon, has been investigated with reference to uncertain cerebral dominance and other personality factors. Knott and Tjossem<sup>7</sup> have taken electroencephalograms from both cerebral hemispheres of stutterers and non-stutterers during speech. Their results show distinctive differences between the two groups, differences that are related to the balance of excitation in the two hemispheres. This physiological explanation, however, does not explain all cases of stuttering, nor does it explain how it develops. Cobb<sup>8</sup> attributes the precipitating factor to some emotional stress. Fletcher<sup>9</sup>

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6 Florence M. Young, "An Analysis of Certain Variables in a Developmental Study of Language," Genetic Psychology Monographs, 23:3-142, 1941.

7 John R. Knott and Theodore D. Tjossem, "Bilateral Electroencephalograms from Normal Speakers and Stutterers," Journal of Experimental Psychology, 32:357-362, 1943.

8 Stanley Cobb, Borderlands of Psychiatry (Cambridge: Harvard University Press, 1943), p. 51.

9 John M. Fletcher, The Problem of Stuttering (New York: Longmans, 1928), p. 312.

says it is the habitual attitude of fear, embarrassment, and lack of confidence in one's speech or in oneself which causes stuttering.

Among the mentally ill, furthermore, speech is often considered to be an indication of the disorder. In an analysis of their language patterns, it was found that mania tends to manifest itself in the flitting from one topic to another. On the other hand, the depressed person's speech is slow and monotonous; there is little change of voice and much repetition. The schizophrenic's speech is disarranged; he uses so many idiosyncratic meanings for words that his speech is usually unintelligible. His speech is also impersonal.<sup>10</sup>

The voice, as another specific aspect of language, has an intimate relationship with personality. Wagoner and Downey<sup>11</sup> speak of a one-to-one relationship between vocalization, such as rhythm and tempo, and temperament. They found that the person who speaks rapidly and with great impulsion will act accordingly. The person who speaks with great deliberation and hesitancy behaves similarly in

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10 Mary Alice White, "A Study of Schizophrenic Language." Journal of Abnormal and Social Psychology, 44:60-74, No. 1, January 1949.

11 Lovisa Wagoner and John E. Downey, "Speech and Will-Temperment," Journal of Applied Psychology, 6:291-297, 1922.

non-verbal behavior. Taylor<sup>12</sup> reports that twenty people listening to twenty voices were able to agree to a high extent on the personality traits of the people concerned, with speech as the only guide. Allport and Cantril<sup>13</sup> discovered that when listeners judged the personality of the unseen speaker, they judged the more highly organized and deep-seated traits and dispositions more consistently and more correctly than the more specific features of physique and appearance.

In the preceding paragraphs, various aspects of language were mentioned, e.g. "style" or sentence length, stuttering, rhythm, tempo, and quality of voice. These, along with the words used and the combination thereof, are the various modes of representing and communicating thoughts, emotions, and desires. It is the unique manner and pattern in which such various aspects of language are arranged which distinguish one personality from another.

Inasmuch as the specific problem of this dissertation entailed the quantitative analysis of grammatical constructions, namely subjects, verbs, adjectives, objects, and their

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12 Harold C. Taylor, "Social Agreement on Personality Traits as Judged from Speech," Journal of Social Psychology, 5:244-248, 1934.

13 Gordon W. Allport and H. Cantril, "Judging Personality from Voice," Journal of Social Psychology, 5:27-54, 1934.

arrangements, the next section is devoted to the survey of the work done in this area.

### III. SPECIFIC SETTING OF THE PROBLEM

Buseman<sup>14</sup> was one of the first investigators to use the quantitative analysis of language. He employed the "action quotient," equal to the number of verbs divided by the number of adjectives in a given language sample. He found that it correlated negatively with emotional stability of pupils as judged subjectively by their teachers. Boder<sup>15</sup> later worked along the same lines as Buseman. However, he inverted the fraction; the number of adjectives was divided by the number of verbs. This Boder called the adjective-verb quotient (AVQ). He demonstrated that there is a significant difference for various types of written material, namely drama, law, fiction, and science. He also found that the AVQ fluctuates for the individual writer during his lifetime. Adjectives and verbs were again recently counted by

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14 Buseman, Die Sprache der Jugend als Ausdruck der Entwicklungsrhythmik, 1925.

15 David Boder, "The Adjective-Verb Quotient: A Contribution to the Psychology of Language," The Psychological Record, 3:310-343, 1940.

Mann.<sup>16</sup> He found that normal subjects had a more highly differentiating language structure, in that they use more adjectives per verb, than do the schizophrenics. This may be interpreted to mean that normals are more able to represent accurately the actualities which they attempt to symbolize.

Another linguistic construction, the subordinate (dependent) clause,<sup>17</sup> has been quantitatively investigated by LaBrant<sup>18</sup> and Anderson.<sup>19</sup> LaBrant used the "subordination index," the number of subordinate clauses divided by the total number of verbs, in analyzing children's language employed in their written composition. The investigation showed that the "subordination index" is a function of both mental and chronological age but is markedly influenced by chronological age when mental age is constant. In other words, there is between chronological age and the "subordination index" a relationship which is more than that between mental age and

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<sup>16</sup> Wendell Johnson, "Program of Research," Psychological Monographs, Vol. 56, No. 2, 1944, pp. 39-70.  
Mary Bachman Mann, "III The Quantitative Differentiation of Samples of Written Language."

<sup>17</sup> In the sentence "Sam delivers papers before he comes to school," "before he comes to school" is the subordinate (dependent) clause.

<sup>18</sup> Lou L. LaBrant, "A Study of Certain Language Developments of Children in Grades Four to Twelve, Inclusive," Genetic Psychology Monographs, 14:387-492, 1933.

<sup>19</sup> John E. Anderson, "An Evaluation of Various Indices of Linguistic Development," Child Development, 8:62-68, 1937.

the "subordination index." There was no difference between boys and girls on subordination and length of clauses. Anderson made a similar study on college students' compositions. He found that the proportionate number of subordinate predicates showed no significant relationship to age, sex, college aptitude, Iowa English scores, or high school rank. Thus his results suggest that the use of subordinate clauses is a function of chronological age up to a certain point. It then reaches a plateau where no differentiation can be made.

A further approach to quantitative analysis stems from the work of Piaget.<sup>20</sup> He has stated that the thought of the child evolves from an egocentric and autistic type to the logical and socialized type of adulthood. Egocentricity is expressed in speech by the use of the first person while socialization is shown by the use of the third person. This would lead to the hypothesis that a child would use the first person in his speech more often than the adult. Several investigations along this line have been conducted. Adams<sup>21</sup> reports that forty-one per cent of the remarks of

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20 Jean Piaget, The Language and Thought of the Child (New York: Harcourt Brace, 1926), p. 25.

21 Stanley Adams, "A Study of the Growth of Language Between Two and Four Years," Journal of Juvenile Research, 16:269-277, 1932.

four year olds are self-related. Nice<sup>22</sup> investigated the conversation of seven children and two adults and found a decrease in the use of "I" with each age and an increase in the use of "you." Goodenough<sup>23</sup> discovered that pronouns of the first person singular are used more often during play with other children than when the child is alone with an adult, while pronouns of the third person singular tend to drop out with age increase. Henle and Hubbell<sup>24</sup> found that college students used ego related sentences about forty per cent of the time. This was about as frequent as for the child. The difference lies in the qualitative aspect. The adult makes statements of his activities, interests, and personal opinion, whereas the child uses expressions of personal power or display, of defense of his feeling of ownership, and of resistance to interference. Thus growing social consciousness does not imply a concomitant decrease of concern with the self.

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22 Margaret M. Nice, "An Analysis of the Conversation of Children and Adults," Child Development, 3:240-246, 1932.

23 Florence L. Goodenough, "The Use of Pronouns by Young Children: A Note on the Development of Self-Awareness," Journal of Genetic Psychology, 52:333-346, 1938.

24 Mary Henle and M. B. Hubbell, "Egocentricity in Adult Conversation," Journal of Social Psychology, 9:227-234, 1938.

Johnson<sup>25</sup> extended work in this general field by establishing a program of research on language to see if differences in intelligence could also be ascertained by the relative frequency with which particular kinds of words were used. All the research projects were exploratory in nature. One study in this program, that conducted by Mann, has already been cited.<sup>26</sup> Other projects were by Fairbanks<sup>27</sup> and Chotlos.<sup>28</sup> Fairbanks found that college students who were in the 90th percentile on the Iowa Qualifying and Placement Examinations had a much higher Type Token Ratio, that is the number of different words divided by the total number of words, than the schizophrenics. Among the schizophrenics, those with highest intelligence had the highest Type Token Ratio. Thus it was felt that the Type Token Ratio correlated positively with intelligence. Chotlos analyzed the written language of normal individuals. He found that more highly developed the individual is in terms of intelligence and age, the more highly differentiated his language

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25 Wendell Johnson, "Program of Research," Psychological Monographs, Vol. 56, No. 2, 1944, pp.1-110.

26 See page 8 of this report for Mann's project.

27 Johnson, op. cit., pp. 3-38. Fairbanks, "I The Quantitative Differentiation of Samples of Spoken Language."

28 Ibid., pp. 70-110. John W. Chotlos, "IV A Statistical and Comparative Analysis of Individual Written Language Samples."

structure appears to be. High intelligence groups are characterized by a large number of nouns; low intelligence groups are characterized by many verbs and adverbs. There is no significant difference in the number of nouns among the city, town, and rural groups.

A comprehensive study in similar vein was undertaken by Balken and Masserman.<sup>29</sup> They used ten linguistic criteria in an attempt to distinguish among anxiety, conversion hysteria, and obsessive compulsive neuroses. Protocols to twenty test pictures were analyzed. The ten criteria<sup>30</sup> and their respective meanings were as follows:

1. The average number of words per phantasy gave a measure of productivity.
2. The number of predicative, participial and attributive adjectives indicated the relative wealth of static descriptions in the phantasies.
3. The relative number of active, passive, and intransitive verbs; a high number of verbs denoted a kinetic release in the phantasy of anxious tensions in the narrator.

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29 Eva R. Balken and Jules H. Masserman, "The Language of Phantasy: III The Language of the Phantasy of Patients with Conversion Hysteria, Anxiety State, and Obsessive-Compulsive Neuroses," The Journal of Psychology, 40:75-86, 1940.

30 The unique profile combination of these ten criteria characterized each neurotic group.

4. The relative frequency of "Pro" statements, such as expressions of possibility, probability, and certainty, which indicate the relative ability of the subject to make straight-forward statements; and the relative frequency of "Con" statements, such as expressions of impossibility, improbability, and uncertainty, which revealed obsessive ambivalences, overt doubt, and self criticism.

5. Incidences of expressions of conative alternative, equivalences, or vacillations; these indicated the difficulties and ambivalencies which the subject had in representing and resolving his conative conflicts in his phantasies.

6. Zwang expressions, such as "I have to," "I must," and "she finds it necessary," indicated the compulsive tendencies in the subject's thinking.

7. The number of questions asked of the examiner during the test indicated the lack of interpersonal tension in the subject.

8. Special expressions, such as (a) vagueness: "sort of," "kind of," (b) reasoning: "because," (c) derivation: "as a result," (d) means: "This is how," and (e) special interjection: "well,"; these are indications of rationalization.

9. The number of occurrences of (a) the first person pronoun, and (b) direct reference to the narrator: "it seems to me," "the way I see it," etc.; these are measures of the

egocentricity or re-introjection of the subject's imagery.

10. Identification of a character in the phantasy with the narrator: "this might be I," "just like my own story," etc.; this manifested instances of more direct and conscious projections of the subject into his phantasies.

Various characteristics of the above ten criteria appeared for the three neurotic reaction types. The conversion hysteria's phantasies were as follows:

1. Productions of medium length.
2. A plethora of leisurely descriptive material.
3. Little vagueness, ambivalence or qualification of statement (high pro-con quotient as contrasted with low certainty-uncertainty and qualification-certainty quotients and with low alternative and "special expressions" ratings).
4. A minimum use of the first person or of identifications with the narrator.

In contrast, the phantasies in the anxiety state were as follows:

1. Productions were brief.
2. Used many verbs.
3. Special expressions connoting vagueness, hesitation, and trepidation were freely used.
4. Direct identifications of the narrator with characters in his phantasy frequently occurred.

For the obsessive-compulsive neuroses, the phantasies were as follows:

1. Used many Zwang expressions.
2. Rationalized and elaborated the many ambivalences

and uncertainties in his phantasies (highest qualification-certainty quotient; extensive use of "special expressions" and lowest pro-con and certainty-uncertainty quotients).

3. Productions were long.
4. Much self-identification with the character in the phantasy.

One of the most extensive quantitative analyses of speech was made by Sanford.<sup>31</sup> He investigated the verbal expressions of twenty people. He found that they differed significantly and consistently. He also make a thorough investigation of two subjects. He investigated 279 variables. Of these, 161 were found to be significant at the ten per cent level in differentiating one subject from the other; and thirty were significant at the five per cent level. No attempt was made to diagnose the personalities of the two subjects. The results of the analysis (1) demonstrate that individuality in speech can be treated successfully by an analytical procedure, (2) indicate which categories are likely to be most efficacious in revealing individual differences, and (3) suggest that by extending this analysis to larger groups of subjects a certain number of basic ("speech traits" can be discovered and a technique devised

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<sup>31</sup> Fillmore Sanford, "Individual Differences in the Mode of Verbal Expression," (Ph.D. Dissertation, Harvard University, Cambridge, 1941).

for scoring any individual with respect to these traits.

Some of the above studies can be criticized on the basis that various parts of speech, such as nouns, verbs, and adjectives, are used as static discrete units. Sapir says, "Our conventional classification of words into parts of speech is only a vague, wavering approximation to a consistently worked out inventory of experience."<sup>32</sup> Verbs are usually regarded as being inherently concerned with action, noun as the name of some definite object or person, and adjectives as expressions of quality. However, upon closer analysis, these categories are not so simple. Each part of speech is graded into the other, and, in fact, could be converted into the other. Thus a study which involves simply the counting of verbs, adjectives and nouns with a disregard for their function, is hardly useful for a psychological interpretation in terms of tension expression and reduction. The present research attempted to deal with functional categories, such as subject, object, and different kinds of verbs (that is, transitive, intransitive, and passive).

The preceding studies have investigated the relationship of various aspects of personality, such as intelligence,

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<sup>32</sup> Edward Sapir, Language (New York: Harcourt Brace and Company, 1921), p. 123.

egocentricity, anxiety, assertion, and hesitation, to grammatical categories. Results have been fruitful enough to suggest that other types of behavior might also have a certain relationship to various grammatical categories. Inasmuch as attitudes and traits have been investigated only to a small extent with reference to language, and inasmuch as they are viewed as important personality components, it was decided to relate the present research to that area by dealing specifically with degree of dominance as a personality component. In the following chapter pertinent literature on dominance is reviewed.

In order to present an over-all view, it is appropriate at this time to set down the remainder of the dissertation. As stated above, in chapter II literature on dominance is reviewed, relevant experiments cited, and various definitions of dominance considered; a final integrative definition is then given. Chapter III explains the preliminary investigation. This includes the selection of subjects, construction of the situations used as the uniform stimuli, an accounting of the variables, and an outline of the procedure. The statistical results are also given. By inspecting the results, a tentative relationship between dominance and six grammatical categories was formulated. The experiment testing the relationship between the six grammatical categories and dominance is made explicit in chapter IV. Chapter V explains the

statistical analyses and the results. Since the results obtained were not conclusive enough, a reclassification was performed. Four independent judges classified the responses according to three levels of dominant behavior. The statistical procedure used was discriminant analysis. This is explained in chapter VI. Chapter VII entails the construction of a theory to cover the relationship between dominance and grammatical categories, a statement of the psychological hypothesis, and the empirical hypotheses to test it. The results obtained from the experiment were rather low. An explanation for their lowness is given. Chapter VIII is a summary of the dissertation, and it includes implications for further research.

## CHAPTER II

### LITERATURE ON DOMINANCE

The present chapter is concerned with degree of dominance as the selected aspect of personality to be related to language. Literature on this trait is reviewed. Various theorists' viewpoints on the importance of dominance in conceptualizing personality are considered; experiments on the infrahuman and human levels are cited; and numerous definitions of dominance are reviewed. Finally, an integrative definition of dominance is worked out. Since dominance and submission refer to the same continuum, many of the works cited involve the use of the latter term.

#### I. IMPORTANCE IN CONCEPTUALIZATION OF PERSONALITY

Adler<sup>1</sup> speaks of the "style of life" of the individual as the unifier of personality. The hallmark of the "style of life" of the dominant person is his search for power and prestige. Spencer<sup>2</sup> called dominance and submission the Principles of Supremacy and Subordination which operate in our human society and also among the lower animals.

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1 Alfred Adler, The Practice and Theory of Individual Psychology (New York: Harcourt Brace and Company, 1924), p. 20.

2 Herbert Spencer, First Principles (six edition; New York: Appleton, 1888), p. 11.

Dominance, says McDougall<sup>3</sup> is a mastery motive which is a product of learning in a competitive social setting.

Concerning ascendance (= dominance) and submission, Allport states

They are dynamic modes of adjustment generalized and distributed quasi-normally in the population at large. These . . . traits are expressive in the sense that they color behavior that is specifically motivated to some ulterior end. That is to say, in the pursuit of almost any goal, the ascendant person will be ascendant, the expansive person will be expansive . . . Thus these traits are "directive." Furthermore, each may also acquire a motivational character. The ascendant person desires to take the active role; the expansive person seeks opportunities to express his ideas . . . In comparison with the attitudinal traits . . . they . . . are relative overt in their manifestation, more directive than motivational, and it is for these reasons that they are . . . labeled expressive.<sup>4</sup>

Murphy<sup>5</sup> speaks of personality as made up of three levels. On the first level are the global dispositions, such as metabolic rate, thresholds, motor strength, and endurance; on the second level are special reaction tendencies which are patterns of generalized conditioning termed traits; and on the third level is the system of integration

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<sup>3</sup> William McDougall, An Introduction to Social Psychology (fifteenth edition; Luce, 1926), p. 67.

<sup>4</sup> Gordon W. Allport, Personality A Psychological Interpretation (New York: Henry Holt and Company, 1937), p. 410.

<sup>5</sup> Gardner Murphy, Personality: A Biosocial Approach (New York: Harper and Brothers, 1947), pp. 643-645.

which arises from the interaction of stage two components with one another and other phases of the environment. This system of integration is the attitude towards the self and the means of defending or enhancing the self. Murphy feels that personality functions to a large degree on the second and third levels. Since dominance and submission are on the second level, they become important determiners of personality.

In the foregoing paragraphs, dominance has been termed a unifier, a motive, and a trait. These terms are all employed as intervening variables. They signify an inferred internal state (of energy) that motivates behavior. The viewpoints of the above theorists suggest, therefore, that dominance is an important personality component. As such, it seems likely to reflect itself in verbal behavior. Consequently, an investigation of dominance in relation to language is deemed justified.

Before conceptualizing dominance for the purposes of the present study, it is fitting to review how previous investigators have utilized it. In part II experiments concerning dominance on the infrahuman and human levels are discussed.

## II. EXPERIMENTAL STUDIES ON DOMINANCE

Infrahuman Experiments. Schjelderup-Ebbe<sup>6</sup> investigated the hierarchy of rank, called the "pecking order," among birds. A series of experiments on "social hierarchies" among chickens was conducted by Murchison;<sup>7</sup> experiments on social hierarchy among fishes, by Noble;<sup>8</sup> and social hierarchy among rabbits, by Brown.<sup>9</sup> The combined findings indicate that a dominance hierarchy exists among birds, chickens, fishes and rabbits.

Another experimenter in this area is Maslow.<sup>10</sup> He made an investigation of dominant behavior among primates. The dominant animal was defined as one whose behavior patterns are carried out without deference to the behavior

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6 Schjelderup-Ebbe, "Social Behavior of Birds" in Carl Murchison's (editor) A Handbook of Social Psychology (Worcester Massachusetts, Clark University Press, 1935).

7 Carl Murchison, "The Experimental Measurement of a Social Hierarchy in Gallus Domesticus: I. The Direct Identification and Direct Measurement of Social Reflex No. 1 and Social Reflex No. 2," Journal of General Psychology, 12:3-39, 1935.

8 Glenn K. Noble, "Collecting Net," Time magazine, September 4, 1939, p. 34.

9 Robert H. Brown, "Stability of Conditioning and Sexual Dominance in the Rabbit," Science, 86:520, December 3, 1937.

10 Abraham H. Maslow, "The Role of Dominance in the Social and Sexual Behavior of Infra-human Primates: I. Observations at Vilas Park Zoo," Journal of Genetic Psychology, 48:261-277, 1936, p. 264.

patterns of his associates. The subordinate animal is one whose behavior patterns are suggested, modified, limited, or inhibited by the behavior patterns of its more dominant associates. Maslow found that the dominance role was established shortly after the animals were put in the same cage and that the dominance hierarchy, once established, was a fairly permanent relationship.

Experiments on Humans. Goodenough and Anderson<sup>11</sup> used the technique of putting two babies of the same age in a playroom. A toy was dangled before them and then dropped on the floor between them for a period of two minutes. The experimenters observed the number of times each baby reached for the toy, reached for the other child, secured the toy, offered the toy to the other child--all as indices of dominant or submissive behavior.

Another experiment was conducted by Hanfmann.<sup>12</sup> She found a "pecking order" among children comparable to what was found in the lower animals. The relationship was, however, more complex. Instead of A dominating B, C, and D, and B dominating C and D, and C dominating D as in the

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<sup>11</sup> Florence L. Goodenough and John E. Anderson, Experimental Child Study (New York: D. Appleton-Century Company, 1931), pp. 61-70.

<sup>12</sup> Eugenia Hanfmann, "Social Structure of a Group of Kindergarten Children," American Journal of Orthopsychiatry, 5:407-410, 1935.

lower animals, she found A dominating B, B dominating C and D, but both C and D dominating A.

Other studies have been conducted using various personality schedules on normal individuals. Wasson<sup>13</sup> employed the Humm-Wadsworth Temperament Scale. In keeping with expectation, she found a significant inverse correlation,  $-.72$ , between ascendance-submission and the Autistic Component. A submissive person, it was revealed, frequently has schizoid traits that often accompany a retiring, asocial, or autistic disposition. Bender,<sup>14</sup> in a further investigation, found a correlation of  $+.38$  between ascendance and submission and extroversion and introversion (Heidbreder's test). A further study was conducted by Jack.<sup>15</sup> He has shown that ascendance-submission is markedly constant in the individual from an early age. He also demonstrated that ascendant behavior can be built up through training so that a very non-ascendant child will express ascendant behavior.

In the above experiments, a certain type of behavior

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13 Margaret M. Wasson, "The Agreement among Certain Types of Personality Schedules," Journal of Psychology, 9:350-363, April 1940.

14 Irving E. Bender, "Ascendance-Submission in Relation to Certain Other Factors in Personality," Journal of Abnormal and Social Psychology, 23:137-143, 1928.

15 Leonard M. Jack, "An Experimental Study of Ascendant Behavior in Preschool Children," University Iowa Studies: Study Child Welfare, Vol. 9, No. 3, 1934.

in each case was labeled dominant. For example, the pecking order in Schjelderup-Ebbe's experiment was determined by how much the bird pecked and was pecked. The greater the number of birds a given bird was able to peck and the smaller the number he was pecked by, the higher that given bird was in the pecking or dominance hierarchy. The implied goal was to peck other birds. The more dominant bird would reach his goal, whereas the less dominant would not.

Further, Maslow defined dominance among primates as behavior carried out (attainment of goal) without deference to the behavior of the other primates. Also, Goodenough and Anderson defined the more dominant child as the one who reached for the toy, secured it, and retained it longer than the other child in each situation. The securing of the toy was implied to be the goal. The dominant child was the one able to reach his goal more often.

From the basic description of dominance used by the above experimenter, namely, to reach one's goal, and from other definitions to be supplied in section III, a final integrative definition was achieved. This is explained in the next section.

### III. DEFINITION OF DOMINANCE

Allport<sup>16</sup> states that ascendance (= dominance) is the disposition to dominate another person in face-to-face relationships. Maslow<sup>17</sup> has characterized the person high in dominance as having a feeling of being able to handle other people, and a feeling of mastery, of general capability, and high self respect. On the other hand, the person with a low feeling of dominance has feelings of uncertainty, lacks confidence, and lacks faith in himself and in his abilities. These feelings are noted in what the subject says about himself in an intensive interview.<sup>18</sup> Thus, it can be said that the dominant person is able to meet threats to the self and is able to handle other people. Symonds<sup>19</sup> speaks of dominance as the demonstration of power to control others and to bend them to one's will. Ascendance and submission, according to Murphy,<sup>20</sup> is the characteristic

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16 Gordon W. Allport, "Test for Ascendance-Submission," Journal of Abnormal and Social Psychology, 23:118-136, 1928

17 Abraham H. Maslow, "Dynamics of Personality Organization I," Psychological Review, 5:514-539, 1943.

18 Abraham H. Maslow, "Dominance, Personality, and Social Behavior in Women," The Journal of Social Psychology, 10:3-39, 1939.

19 Percival M. Symonds, The Dynamics of Human Adjustment (New York: D. Appleton-Century Company, 1946) p. 951.

20 Murphy, op. cit., p. 984.

tendency to lead or follow the group situation.

The above definitions and explanations of dominant behavior, although varied to a certain extent, seem to have the following point in common: the dominant person seeks to control the other person so that he can reach his own goal regardless of interference. This is in accordance with the basic description of dominant behavior used by the experiments cited in section III. It was felt, therefore, that the definition of dominance that follows encompasses the essence of the above definitions with the advantage of being more workable in an experimental setting.

Since dominance is behavior directed toward a specific object, namely the goal, and since it is concerned with being favorably or unfavorably disposed toward the barrier, dominance may be called an attitude. A high level of dominance is the predisposition to reach a goal regardless of a barrier. There is an unfavorable disposition toward the barrier. A low level of dominance is the predisposition to relinquish the goal in face of a barrier. There is a favorable disposition toward the barrier. The level of dominance is inferred from behavior which is goal directed. Take for example a situation where person A is aiming toward goal A. He is prohibited by the barrier, person B,<sup>21</sup> who is directed toward

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<sup>21</sup> Only human barriers are considered in this definition.

goal B. If person A continues on his original pathway, manipulates person B in some way, and reaches his own goal A, he is exhibiting very dominant behavior; and it is inferred that he has a high level of dominance. On the other hand, if person A relinquishes his goal A and adopts goal B, he is exhibiting the least dominant behavior; and it is inferred that he has a low level of dominance. From these two extremes which are defined as opposite ends of a hierarchy, the following four levels are possible.

Fourth Level of Dominant Behavior (Most Dominant).

Person A is directed toward goal A. He is prohibited by the barrier, person B. He manipulates person B and reaches his own goal, A.

Third Level of Dominant Behavior. Person A is directed toward goal A. He is prohibited by person B. Person A then uses some other pathway of reaching his goal A other than through the barrier, person B.

Second Level of Dominant Behavior. Person A is directed toward goal A. He is prohibited by person B. Both person A and person B modify their goals and adopt another goal AB. Goal AB is now the goal of person A and also the goal of person B.

First Level of Dominant Behavior (Least Dominant). Person A is directed toward goal A. He is prohibited by person B. Person A relinquishes his goal and adopts goal B.

The above hierarchy depends upon two dimensions. One is the manipulation of the barrier or being manipulated by the barrier, and the other is the attainment of the own goal or the adoption of the goal of the barrier. The four levels of dominant behavior, with their dimensions, are given in table I. The hierarchy is logically arranged on the dimension of manipulation of the barrier and being manipulated by the barrier, and also on the attainment of own goal and the relinquishing of own goal. This hierarchy of the four levels of dominant behavior was used to infer the dominance attitude.

Literature on dominance as an aspect of personality has been reviewed. Relevant experiments have been cited. Various definitions of dominance were investigated, and a final integrative definition was proposed. This definition of dominance was used throughout this study. In chapters III and V the situations which were used as the constant stimuli for all the subjects are given. They were so constructed as to include in each case a situation in which an own goal was blocked by a barrier (a second person). The situational analysis scores described in chapter III were also dependent on the above definition of dominance.

TABLE I

**LEVELS OF DOMINANT BEHAVIOR  
AND THEIR DIMENSIONS**

<b>DOMINANT BEHAVIOR</b>	<b>BARRIER</b>	<b>GOAL</b>
<b>Fourth Level</b>	Manipulation of barrier.	Attainment of goal A. No adoption of goal B.
<b>Third Level</b>	(Indirect) manipulation of barrier.	Attainment of goal A. No adoption of goal B.
<b>Second Level</b>	Manipulation of barrier, and manipulated by barrier	Partial attainment of goal A. Partial adoption of goal B.
<b>First Level</b>	Manipulated by barrier.	Relinquishing of goal A. Adoption of goal B.

## CHAPTER III

### PRELIMINARY INVESTIGATION

In order to conduct the present research, it was necessary first to formulate a working hypothesis concerning the relationship of dominance to language. The survey of previous experiments and related literature did not supply sufficient cues for this purpose, since the planned research delved into a relatively new area of investigation. It was expedient, therefore, to carry out an exploratory study. The present chapter explains the preliminary investigation and the implications derived therefrom.

#### I. DESIGN OF THE EXPLORATORY STUDY

Selection of Subjects. Five females at the College of Liberal Arts at Boston University were used as subjects. Since bilingualism affects the speech of an individual,<sup>1</sup> this factor was controlled by eliminating those who reported they or others spoke another language in the home. Since it was felt that English majoring might have some influence on the choice of words for the grammatical categories, English

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<sup>1</sup> Other languages have grammatical combinations in different rhetoric arrangements, e.g. the verb may come last as found in the German language. The bilingual person might carry over these tendencies.

majors were eliminated. The distribution of dominance is different for males and females because of the difference in patterned role in American culture. If the dominance scores of both sexes are combined, a bimodal curve would result.<sup>2</sup> Thus it was necessary to select one sex. Since the experimenter was female, it was felt that better rapport would be gained by using female subjects.

Construction of Activities. The stimuli that were presented in serial order to all the subjects were eight situations. Each was projective in nature. All were so constructed that each contained a barrier (a person) blocking a stated goal of the subject. The responses made by the subjects could then be qualitatively analyzed to yield a score indicating a particular level of dominant behavior in accordance with the criteria stated previously.<sup>3</sup> The general nature of the situations was as follows: Person A is directed toward goal A; and person A is prohibited by a barrier, person B, from reaching goal A. The subjects were asked to imagine themselves in the place of person A. Thus the

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<sup>2</sup> Accordingly Gordon W. Allport and Floyd H. Allport's Ascendence-Submission Reaction Study has separate scales for male and female.

<sup>3</sup> See page 28 of this report for the criteria.

situation represented a face-to-face relationship<sup>4</sup> as best as possible.

In order to secure ideas for constructing the situations, the nature of the items on the Ascendence-Submission Reaction Study was closely examined.<sup>5</sup> Item 4a, for example, in the A-S Reaction Study reads,

A salesman takes manifest trouble to show you a quantity of merchandise. You are not entirely suited. Do you find it difficult to say "No"?

Yes

No

If the subject checks "no," he receives a score of 2; and

4 Dominance (or ascendence) has been defined by the Allports as the "predisposition to dominate another person in a face-to-face relationship." Dominance, then, is expressed when person A is in commerce with person B. This condition was approximated by having the subjects imagine themselves in the situation. In so doing, he would have commerce with the other person on the ideational level.

5 The A-S Reaction Study is a measure of dominance. It has repeat reliabilities around .78 for both forms, the one for men and the one for women. The validity ranges from .29 to .79. It has continually been in use from the time of first publication, and any other test that measures ascendence and submission has borrowed its questions from it. The A-S Reaction Study was not employed to determine the dominance of the subjects used in the present research because the Allports did not make their definition of dominance as explicit as was required for this investigation, and because the validity of the test had such a wide range. It was felt, however, that some of the items on the A-S Reaction Study might yield ideas useful for constructing the situations needed in the present study.

if he checks "yes," he gets a score of -1. In the analysis of the above situation, it can be seen that the person has as his goal not to buy anything. If he reaches that goal in spite of the barrier, the salesman, he is very dominant; if he adopts the goal of the salesman, namely to buy the merchandise, he is less dominant or submissive. This item fits into the general nature of the situations required by the present investigation. This item was restructured into the following situation:

A saleswoman has come to Ann's home. She takes a great deal of pains to show Ann all the various kinds of cosmetics she carries. Ann is not interested and does not want to buy any.

In the A-S Reaction Study again, item 7 was useful as the basis for another situation in the present study. Item 7 reads as follows:

You have heard indirectly that an acquaintance has been spreading rumors about you which, though not likely to be serious in consequence, are nevertheless unjustified and distinctly uncomplimentary. The acquaintance is an equal of yours in every way. Do you usually

"have it out" with the person \_\_\_\_\_

let it pass without any feeling \_\_\_\_\_

feel disturbed but let it pass \_\_\_\_\_

If "have it out with the person" is checked by the subject, he is given a score of 1. If either "let it pass without

any feeling" or "feel disturbed but let it pass" is checked, he receives a score of 0. In the analysis of the above item, it seems that the person has as his goal to stop the rumor. He is confronted with a barrier, the acquaintance. If he manipulates the barrier, namely, "have it out" with him, he is the dominant person. If he does not manipulate the barrier, he is a less dominant person. This arrangement is in accordance with the general requirements of the situations used in the present research. It was modified to the following form:

Ann has heard that an acquaintance of hers is spreading an unjustified and uncomplimentary rumor about her. Ann meets this acquaintance in the hallway.

Another usable item, item 11, on the A-S Reaction Study reads as follows:

Some possession of yours is being worked upon at a repair shop. You call for it at the time appointed, but the repair man informs you that he has "only just begun work on it." Is it your customary reaction

to upbraid him \_\_\_\_\_

to express dissatisfaction mildly \_\_\_\_\_

to smother your feelings entirely \_\_\_\_\_

If "to upbraid him" is checked, the subject receives a score of 3; if "express dissatisfaction mildly" is checked, he receives a score of 0; and if "to smother your feelings

entirely" is checked, he is given a score of -1. In the above item the person has as his goal to obtain his goods in a repaired state. He is opposed by the barrier, the repair man, who has "only just begun work on it." This arrangement is in accordance with the general nature of the situations required in the present research. It was modified to the following form:

Ann took her shoes to the cobbler to be fixed. He said they would be ready in a week. A week later Ann went to the cobbler. He is telling her that he has "only just begun work on it."

The other situations in the present investigation were constructed in terms of the general framework of having a person A directed toward goal A but prohibited by person B. Situations were sought which might be expected in the experience repertoire of the subjects. The other situations were as follows:

1. Ann is looking desperately for a woman to do her housecleaning. She has interviewed many women, but they have all been unsatisfactory. She is now talking to Isabelle who seems to be just the type she wants. Isabelle, however, wants seventy-five cents an hour and will not come for less. Ann can pay only sixty-five cents an hour at the most.

Here the person, "Ann," has the goal of "getting housework done at sixty-five cents an hour." The barrier is "Isabelle who wants seventy-five cents an hour."

2. Ann is in class. The teacher has returned the examination papers saying that all the papers were carefully graded and he does not want to hear any complaints from the students. Ann feels that a question was marked unfairly.

In this situation, "Ann" has the goal of "having the question reconsidered." The barrier is the "teacher" who says "he does not want to hear any complaints."

3. Ann is at a theatre to see a movie. As she goes down into the theatre, she is stopped by the usher who is prohibiting people from going down any further. He tells Ann there are no more seats. However, Ann can see that there are some empty seats ahead. She would like to sit up there.

"Ann" has the goal of "sitting in the seats ahead." "Ann" is prohibited by the usher.

4. Ann is on the same committee as Jack. They are to plan and decorate the hall for a dance. Ann would like to have rather an elaborate setup and have the place look nice for the event. Jack, who will help Ann decorate, prefers to have it as simple as possible, so it wouldn't take much work.

In this situation, "Ann" has the goal of "decorating the hall elaborately." The barrier is "Jack," who wishes to "keep the decorations as simple as possible."

5. Ann is at a toy counter to buy some toys. She is in a hurry. It is now her turn to be waited on, but the salesgirl waits on the person who came after her.

"Ann" has the goal of "being waited on." Ann is prohibited by the salesgirl who waits on the person who came after her."

The foregoing situations were those used in the present investigation.

Grammatical Categories. In chapter II it was pointed out that this study was concerned with functional grammatical categories rather than the various parts of speech as such.<sup>6</sup> The following grammatical categories were counted:

1. Active Verb. This is a form of the verb which shows that the subject acts.<sup>7</sup> For example "The cobbler fixed the shoes." "Fixed" is an active verb.

2. Intransitive Verb. This is a verb that does not require a receiver of the action to complete its meaning.<sup>8</sup> For example "She smiled." "Smiled" is an intransitive verb.

3. Passive Verb. It is the form of the verb which shows that the subject is being acted upon.<sup>9</sup> For example "The shoes were fixed." "Were fixed" is the passive verb.

4. Transitive Verb. This is a verb that requires a receiver of the action to complete its meaning.<sup>10</sup> For

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6 According to John C. Hodges, Harbrace College Handbook (New York: Harcourt Brace and Company, 1946), p. 412, the parts of speech are: noun, pronoun, verb, adjective, adverb, preposition, conjunction, and interjection.

7 Ibid., p. 417.

8 Ibid., p. 416.

9 Ibid., p. 412.

10 Ibid., p. 417.

example "I bought nothing." "Bought" is a transitive verb.

5. Linking Verb. It is a verb used to express the relation between the subject and predicate noun or adjective.<sup>11</sup> For example "The shoes were ready." "Were" is a linking verb.

6. Noun Direct Object. It is any noun that receives the action of a transitive verb.<sup>12</sup> For example "I bought the cosmetics." "Cosmetics" is a noun direct object.

7. Pronoun Direct Object. It is any pronoun that receives the action of a transitive verb.<sup>13</sup> For example "She scorned me." "Me" is a pronoun direct object.

8. Clause Direct Object. This is a subordinate clause used as object of a verb.<sup>14</sup> For example "He said that they were taken." "That they were taken" is a clause direct object.

9. Noun Adjective. This is a noun used as an adjective.<sup>15</sup> For example "The spring rains came." "Spring" is a noun adjective.

10. Participial Adjective. It is a verbal

11 Ibid., p. 403.

12 Ibid., p. 411.

13 Loc. cit.

14 Loc. cit.

15 Ibid., p. 410.

adjective.<sup>16</sup> For example "I'll give you better working conditions." "Working" is a participial adjective.

11. Other Adjectives. These are words used to modify a noun or pronoun (excluding participles).<sup>17</sup> For example "The ambitious salesman stopped me." "Ambitious" is an adjective in this category.

12. Conditional Conjunction. This is a word, expressing condition, which connects words, phrases, or clauses.<sup>18</sup> For example, "Although I don't want it, I'll buy one." "Although" is a conditional conjunction.

13. Other Conjunctions. These are words (excepting those expressing condition) which connect words, phrases, or clauses.<sup>19</sup> For example, "Before you came, I was doing all right." "Before" is a conjunction in this category.

14. Expletives. "It" or "there" are used as expletives. They are used merely as a filler.<sup>20</sup> For example "There is nothing that I want." "There" is an expletive.

15. Indirect Object. This is a term applied to a noun or pronoun that precedes the direct object. It may

16 Ibid., p. 411.

17 Ibid., p. 398.

18 Ibid., p. 402.

19 Loc. cit.

20 Ibid., p. 405.

be regarded as the equivalent of a prepositional phrase with to.<sup>21</sup>

16. Total Number of Words.

Variables. The above eight situations were used as constant stimuli for all subjects. Their responses were analyzed in two separate ways: (1) a qualitative analysis<sup>22</sup> to secure a score for the level of dominance and (2) a quantitative analysis to obtain a numerical score for the different grammatical categories. Each individual was given a composite level of dominance score. This was obtained by adding all the scores on each situation. For example, if person 1 obtained the following scores on each situation:

<u>Situation</u>	<u>Level of Dominance Behavior Score</u>
1	2
2	3
3	3
4	2
5	2
6	1
7	2
8	3

his composite level of dominance score was 18. The maximum score obtainable was 32, while the minimum was 8.

Table II gives the composite level of dominance score for

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21 Ibid., p. 411.

22 See page 28 of this report for levels of dominant behavior.

TABLE II

**COMPOSITE LEVEL OF DOMINANCE SCORES  
FOR SUBJECTS IN PRELIMINARY INVESTIGATION**

<b>SUBJECT</b>	<b>COMPOSITE LEVEL OF DOMINANCE</b>
1	26
2	26
3	21
4	21
5	19

each subject.

The score representing each grammatical category was a ratio score.<sup>23</sup> These were computed in the following manner:

1.  $\frac{\text{Number of Active Verbs}}{\text{Total Number of Verbs}}$
2.  $\frac{\text{Number of Intransitive Verbs}}{\text{Total Number of Verbs}}$
3.  $\frac{\text{Number of Passive Verbs}}{\text{Total Number of Verbs}}$
4.  $\frac{\text{Number of Transitive Verbs}}{\text{Total Number of Verbs}}$
5.  $\frac{\text{Number of Linking Verbs}}{\text{Total Number of Verbs}}$
6.  $\frac{\text{Number of Noun Direct Objects}}{\text{Total Number of Direct Objects}}$
7.  $\frac{\text{Number of Pronoun Direct Objects}}{\text{Total Number of Direct Objects}}$
8.  $\frac{\text{Number of Phrase Direct Objects}}{\text{Total Number of Direct Objects}}$
9.  $\frac{\text{Number of Noun Adjectives}}{\text{Total Number of Adjectives}}$
10.  $\frac{\text{Number of Participial Adjectives}}{\text{Total Number of Adjectives}}$
11.  $\frac{\text{Number of Other Adjectives}}{\text{Total Number of Adjectives}}$
12.  $\frac{\text{Number of Conditional Conjunctions}}{\text{Total Number of Conjunctions}}$

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<sup>23</sup> Ratio scores were computed to eliminate the influence of the length of discourse.

13.  $\frac{\text{Number of Other Conjunctions}}{\text{Total Number of Conjunctions}}$
14.  $\frac{\text{Number of Expletives}}{\text{Total Number of Words}}$
15.  $\frac{\text{Number of Indirect Objects}}{\text{Total Number of Words}}$
16. Total Number of Words

Each individual had seventeen scores, namely a ratio score for each of the fifteen grammatical categories, the total number of words, and the composite level of dominance score. A Pearson Product Moment Correlation<sup>24</sup> between the composite level of dominance score and each grammatical category score was computed. Table III illustrates how the data was arranged.

## II. PROCEDURE

Each subject was asked to report at a specified time. When the subject entered the room, a casual conversation was started. The subject was seated across the table from the examiner. A microphone was placed at the end of the table in order to record the responses. After a few minutes of conversation, the following instructions were given:

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<sup>24</sup> Quinn McNemar, Psychological Statistics (New York: Wiley and Sons, Inc., 1949), p. 96. Formula 30a was used for all the Pearson Product Moment Correlations computed for this study.

TABLE III

## ARRANGEMENT OF DATA FOR CORRELATION

SUBJECT	COMPOSITE LEVEL OF DOMINANCE	RATIO SCORES FOR GRAMMATICAL CATEGORY ONE
1	26	.12
2	26	.12
3	21	.13
4	21	.15
5	19	.13

I am going to describe to you a series of situations in each of which a girl named Ann is concerned. Please imagine that you are Ann and tell in each case what goes on and what the outcome will be.

The eight situations were then presented verbally, one by one, in the following order.

1. Ann is looking desperately for a woman to do her housecleaning. She has interviewed many women but they have all been unsatisfactory. She is now talking to Isabelle, who seems to be just the type she wants. Isabelle, however, wants seventy-five cents an hour and will not come for less. Ann can pay only sixty-five cents an hour at the most.

2. Ann is in class. The teacher has returned the examination papers saying that all the papers were carefully graded and he does not want to hear any complaints from the students. Ann feels that a question was marked unfairly.

3. Ann is at a theatre to see a movie. As she goes down into the theatre, she is stopped by the usher who is prohibiting people from any further. He tells Ann there are no more seats. However, Ann can see that there are some empty seats ahead. She would like to sit up there.

4. Ann is on the same committee as Jack. They are to plan and decorate the hall for a dance. Ann would like to have rather an elaborate setup and have the place look nice for the event. Jack, who will help Ann decorate, prefers to have it as simple as possible, so it wouldn't

take much work.

5. Ann is at a toy counter to buy some toys. She is in a hurry. It is now her turn to be waited on, but the salesclerk waits on the person who came after her.

6. A saleswoman has come to Ann's home. She takes a great deal of pains to show Ann all the various kinds of cosmetics she carries. Ann is not interested and does not want to buy any.

7. Ann has heard that an acquaintance of hers is spreading an unjustified and uncomplimentary rumor about her. Ann meets this acquaintance in the hallway.

8. Ann took her shoes to the cobbler to be fixed. He said they would be ready in a week. A week later Ann went to the cobbler. He is telling her that he has "only just begun work on it."

In this section the design of the exploratory study was made explicit. The manner of selection of the subjects and the management of the several controls were explained. The rationale underlying the situations was given, and each situation was explained in terms of this. Then the procedure used in the experimentation was outlined. In the next section, the analysis of the responses is explained and the implications derived therefrom are given.

### III. QUALITATIVE ANALYSIS OF PRELIMINARY DATA

In accordance with the criteria of dominance set down in chapter II,<sup>25</sup> the responses made by the subjects to the eight experimental situations were analyzed qualitatively. Table II shows the composite level of dominance score for each subject. By way of illustration of how these scores were obtained, the following samples of dominance as indicated in responses to single situations are supplied.

Fourth Level of Dominant Behavior. (A response to situation one.) Well, maybe she could provide better working conditions than she'd usually get, instead of paying the ten cents an hour more; and I think Isabelle might accept for a trial period anyway, and they probably could get along together.

Third Level of Dominant Behavior. (A response to situation four.) I think Ann would talk to the rest of her committee and ask their opinions and give her side of the story and his. Then, after considering their opinions, she would talk to Jack and explain to him why she would want to have it elaborate and try to convince him with her own opinions and those of the rest of the committee. And then she would say to Jack that if he still disagrees she would be

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<sup>25</sup> See page 28 of this report for levels of dominant behavior.

willing to do the work, he could just be co-chairman of the committee and do the work in that respect with her, but she would do most of the work herself if he thought that it would be too much work. And if there was still conflict, she would take it to the faculty advisers and explain it; and if she had more power, which she evidently has, she would go ahead and do it the way she wanted to do it.

Second Level of Dominant Behavior. (A response to situation four.) I don't think the matter is so great that if Ann didn't really want to, if she really wanted to be very decorative, she could do it herself, get a committee to help her. They could compromise. He could do as much as he could do, and then she could put on the decorative touches.

First Level of Dominant Behavior. (A response to situation one.) I think that Ann will want her very desperately, and her reaction? I think that, well, in her case if she couldn't find anybody else to do the work she had been trying hard to find someone for her children, she would, well she might either give up something herself to pay for the seventy-five cents or she might tell her that she'd give her one meal, that is, if she lives out, give her one meal for that. Actually it would come out of her household money, and she'd have the money. Well, I think Ann's looking out for her family because I suppose she wants to get

out to merry times and bridge parties, and she's very anxious to have a maid to take care of her children. So she would hire Isabelle.

#### IV. QUANTITATIVE ANALYSIS OF PRELIMINARY DATA

The various grammatical categories were counted for each subject. Table IV summarizes the ratio scores for each grammatical category for each subject. At this time, it is desirable to give an example of the quantitative scoring system. The following response of a subject to situation four serves as the illustration.

I don't think the matter is so great that if Ann didn't really want to, if she really wanted to be very decorative, she could do it herself, get a committee to help her. They could compromise. He could do as much as he could do, and then she could put on the decorative touches.

<u>Grammatical Category</u> <sup>26</sup>	<u>Frequency</u>
1. Active Verbs	10
2. Intransitive Verbs	3
3. Passive Verbs	0
4. Transitive Verbs	7
5. Linking Verbs	1
6. Noun Direct Objects	1
7. Pronoun Direct Objects	1
8. Phrase Direct Objects	4
9. Noun Adjectives	0
10. Participial Adjectives	0
11. Other Adjectives	4
12. Conditional Conjunctions	2

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<sup>26</sup> See pages 38-41 of this report for definition and examples.

TABLE IV

RATIO SCORES FOR GRAMMATICAL CATEGORIES  
IN PRELIMINARY INVESTIGATION

SUBJECT	GRAMMATICAL CATEGORIES															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	.94	.38	.06	.62	.17	.35	.22	.52	.06	.09	.85	.18	.81	.04	.00	976
2	.90	.31	.10	.69	.07	.33	.17	.50	.15	.17	.68	.26	.74	.00	.00	514
3	.98	.17	.02	.83	.15	.28	.44	.28	.04	.04	.92	.29	.71	.04	.05	373
4	1.00	.19	.00	.81	.18	.30	.25	.45	.07	.06	.87	.20	.80	.00	.04	745
5	.97	.20	.03	.80	.13	.15	.39	.45	.08	.15	.77	.20	.80	.05	.16	492

<u>Grammatical Category</u>	<u>Frequency</u>
13. Other Conjunctions	1
14. Expletives	0
15. Indirect Objects	0
16. Total Number of Words	57

In order to compute the ratio scores, the total number of verbs, direct objects, adjectives, and conjunctions were found. The total number of verbs was the sum of the active and passive verbs. In the above case that would be 10. The total number of direct objects was the sum of noun, pronoun, and phrase direct objects, which would be 6 in the above situation. The total number of adjectives was the sum of noun, participial and other adjectives, which is 4 in the above case. The total number of conjunctions was the sum of conditional and other conjunctions, which was 3 in the above case. The following ratio scores result: grammatical category one, 10 divided by 10, which is equal to 1.00; grammatical category two, 3 divided by 10, which is equal to .30; grammatical category three, 0 divided by 10, which is equal to 0; grammatical category four, 7 divided by 10, which is equal to .70; grammatical category five, 1 divided by 10, which is equal to .10; for grammatical category six, 1 divided by 6, which is equal to .17; grammatical category seven, 1 divided by 6, which is equal to .17; grammatical category eight, 4 divided by 6, which is equal to .67; grammatical category nine, 0 divided by 4, which is equal to 0; grammatical category ten, 0 divided by 4, which

is equal to 0; grammatical category eleven, 4 divided by 4, which is equal to 1.00; grammatical category twelve, 2 divided by 3, which is equal to .67; grammatical category thirteen, 1 divided by 3, which is equal to .33; grammatical category fourteen, 0 divided by 57, which is equal to 0; and grammatical category fifteen, 0 divided by 57, which is equal to 0. The score for grammatical category sixteen is 57. The ratio scores were not obtained for each situation separately and then averaged. All eight situational responses for each individual were scored. Then the frequencies for each grammatical category was added for all ten situations, and then ratio scores were made.<sup>27</sup>

#### V. STATISTICAL ANALYSIS AND INFERENCES

The data was arranged in the manner described on page 44 and illustrated in table III, and a correlation was computed between the composite level of dominance score and each grammatical category ratio. The results are given in table V. Five subjects were used in the present experiment. The degrees of freedom for correlation is  $N-2$ .<sup>28</sup>

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<sup>27</sup> Table IV is the summary of the ratio scores for all the grammatical categories.

<sup>28</sup> Allen L. Edwards, Statistical Analysis for Students in Psychology and Education (New York: Rinehart and Company, Inc., 1946), p. 188.

TABLE V

OBTAINED CORRELATIONS BETWEEN COMPOSITE LEVEL OF  
DOMINANCE SCORE AND GRAMMATICAL CATEGORIES  
IN PRELIMINARY INVESTIGATION

GRAMMATICAL CATEGORY	OBTAINED CORRELATION
Active Verbs	-.343
Intransitive Verbs	.962
Passive Verbs	.842
Transitive Verbs	-.819
Linking Verbs	-.412
Noun Direct Objects	.714
Pronoun Direct Objects	.512
Phrase Direct Objects	.460
Noun Adjectives	.626
Participial Adjectives	.745
Other Adjectives	.724
Conditional Conjunctions	-.725
Other Conjunctions	.220
Expletives	-.413
Indirect Objects	-.614
Total Number of Words	.560

Therefore, there were three degrees of freedom. A correlation of .878 is minimally necessary for significance at the five per cent level; and a correlation of .959 is minimally necessary for significance at the one per cent level. Of the sixteen correlations, only one was significant (at the one per cent level). This one significant correlation, however, could have occurred by chance in a distribution of seventeen.

Many of the correlations were high, though insignificant. If these correlations would remain as high in a larger sample, they might well be significant. These were inspected, therefore, as to possible manifestations of the relationship of dominance to language. The actual grammatical categories which were inspected were as follows: intransitive verbs, passive verbs, transitive verbs, noun direct objects, noun adjectives, participial adjectives, other adjectives, conditional conjunctions, and indirect objects.

These high correlations lent themselves to the following hypotheses. The person with a highly dominant attitude is concerned with the barrier more than the person with the less dominant attitude. He would be inclined to stress it more in his language. One method of achieving emphasis in the English language is to put the word to be emphasized

at the beginning of the sentence.<sup>29</sup> For example, if the barrier is to be emphasized, it would be used as the subject of the sentence rather than as the direct or indirect object. Also, to express the thought completely at the beginning of the sentence, the intransitive verb construction achieves this aim more adequately than the transitive. Thus, to gain the most emphasis, the barrier would be used as the subject of intransitive verbs by the person with the high level of dominance more often than by a person with a lower level of dominance. Examination of other verbs shows that the subject of the transitive verb is also mentioned first, therefore emphasized. Thus, the person with a high level of dominance would also be prone to use the barrier as the subject of transitive verbs more often than a person with a lower level of dominance. Accordingly, that person would not use the barrier as direct or indirect object as frequently as the person with a lower level of dominance. Another verb examined was the passive. The subject of the passive verb is actually the object of the verb. Therefore it is not the point of emphasis. The person with a high level of dominance would use the barrier as the subject of passive verbs less often than a person with a lower level of dominance. Another way to achieve emphasis

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29 Hodges, op. cit., p. 284.

is through modification. To emphasize the subject, adjectives would be used to modify it. A person, then, with the desire to emphasize the barrier will use adjectives to modify the subject when it is the barrier.

The above conceptualization of the barrier in relation to subjects, verbs, direct objects, indirect objects, and adjectives was an attempt to explain the data gained from the preliminary investigation. This led to the tabulation of the following grammatical categories in the next experiment:

1. Total number of subjects of intransitive verbs.
2. Number of times the barrier was used as subject of intransitive verbs.
3. Total number of subjects of transitive verbs.
4. Number of times the barrier was used as subject of transitive verbs.
5. Total number of subjects of passive verbs.
6. Number of times the barrier was used as subject of passive verbs.
7. Total number of direct objects.
8. Number of times the barrier was used as direct object.
9. Total number of indirect objects.
10. Number of times the barrier was used as indirect object.
11. Total number of adjectives modifying the subject.

12. Number of adjectives modifying the subject when it was the barrier.

In this chapter, the exploratory investigation was discussed. The results were supplied and the inferences drawn were stated. Specific grammatical categories were formulated. These were counted in the final experiment which is described in the next chapter.

## CHAPTER IV

### EXPERIMENTAL DESIGN AND PROCEDURE

The grammatical categories chosen as a result of the findings of the preliminary investigation (chapter III) were employed to test experimentally the hypothesized relationship to dominance. In this chapter the experimental design and the procedure followed are made explicit.

#### I. EXPERIMENTAL DESIGN

Selection of Subjects. The same controls were used in the selection of the subjects for this experiment as in the preliminary investigation.<sup>1</sup> The findings of Chotlos were cited in chapter I.<sup>2</sup> He found that high intelligence groups are characterized by a large number of nouns and that low intelligence groups are characterized by many verbs and adverbs. Since the grammatical categories here employed were not simply nouns, verbs, and adverbs, but rather functional types of verbs, subjects, and objects, it was deemed unnecessary to control this factor of intelligence

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1 See pages 31-32 of this report for the controls in the selection of subjects.

2 See pages 11-12 of this report for Chotlos' findings.

differences or to adjust for them statistically.<sup>3</sup>

Construction of Activities. The stimuli in the preliminary investigation, as explained in chapter III, consisted of eight situations. Inspection of the situations indicated that situation two was a more real face-to-face relationship than the others. The examiner actually (as an assistant in a Psychology course) played a role in relation to the subjects which was comparable to that referred to in the situation. Since this would lessen the projective nature of the test, it was decided to discard it for this experiment. The remaining seven situations were retained. They were, however, changed slightly in wording. "Ann" was originally used in the situations to refer to the goal-seeking individual (person A). The experimenter found that many of the subjects responded in the first person rather than the third. For example, "I would talk to Isabelle" was the response rather than "Ann would talk to Isabelle." This indicated that the subjects became involved in the situation rather easily and that they preferred to use the first person. To facilitate this identification, "Ann" was

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<sup>3</sup> A Pearson Product Moment Correlation was computed between the composite level of dominance scores and the intelligence scores as given in the AGCT. A correlation of .414 was obtained. This is significant at the five per cent level. Correlations between the AGCT scores and the grammatical category ratio scores were computed. Of the six correlations, none were significant.

changed to "you." This also eliminated the possibility of any of the subjects knowing a person by the name of "Ann" and of whom she would be talking in the situations.

For this experiment, three more situations were added to the seven mentioned above. They were projective in nature and were so constructed that each contained a barrier (a person). The Allport and Allport A-S Reaction Study was again inspected for possible material for situations. Item 1, in the A-S Reaction Study, reads,

At the hairdressers are you persuaded to try new shampoos and new styles of hairdressing?

Frequently \_\_\_\_\_

Occasionally \_\_\_\_\_

Never \_\_\_\_\_

If "frequently" is checked, the subject gets a score of -2; if "occasionally" is checked, he is credited with a score of 0; and if "never" is checked, he receives a score of 1. A negative score denotes submission, while a positive score indicates ascendance. In the analysis of the above item, it becomes evident that the person involved does not wish to try anything new. If he maintains that goal in spite of the barrier, the hairdresser, he is a very ascendant person. If he modifies his goal, he is less ascendant. This conception fitted into the general nature of the situations required. The approach in the above item was modified, and

the situation amplified to the following form:

You are at the beauty parlor. You want your hair fixed the same way as usual. The beautician suggests that another hairdo at the same price might be more becoming to you. What will you say to her?

The two other situations, not based on the A-S Reaction Study but similar in essence, were as follows:

1. You have made an appointment with the secretary to see Dr. Irving. You go at the designated time. The secretary tells you, you must make an appointment to see Dr. Irving, and says you have not made one. What will you say to the secretary?

In this situation "you" have the goal of "seeing Dr. Irving now." The barrier is "the secretary" who tells you "you cannot see him because you have not made an appointment."

2. You are living at a dormitory. There is a regulation that if anyone should stay out later than 9 p.m. on any week day, she must forfeit her evening privileges for the next two weeks. This is Wednesday night. You have been out. You are just now coming in at 9:30. The next two weeks are very busy and important weeks for you. Many things are scheduled for the evenings. As you come in the door the housemother says, "You are late." What will you say?

"You" have the goal of "staying out the next week." The "housemother" is the barrier who "prohibits you from reaching your goal."

The foregoing situations were those used in the present experiment. They are listed again in section II.

Levels of Dominant Behavior. In the preliminary investigation, four levels of dominance had been used. Some of the obtained responses could have been put on another level, if a more differentiating scale were available. A scale consisting of six levels was constructed for this experiment, using the same format as that presented in chapter II, section III. The four levels of dominant behavior used in the preliminary study were also based on that format. The six levels are as follows:

1. Sixth Level of Dominant Behavior (Most Dominant). Person A is directed toward goal A. He is prohibited by the barrier, person B. He manipulates person B and reaches his own goal.

2. Fifth Level of Dominant Behavior. Person A is directed toward goal A. He is prohibited by person B. Person A then uses some other pathway of reaching his goal A other than through the barrier, person B.

3. Fourth Level of Dominant Behavior. Person A is directed toward goal A. He is prohibited by person B. Both person A and person B modify their goals and adopt another goal AB. Goal AB is now the goal of person A and also the goal of person B.

4. Third Level of Dominant Behavior. Person A is directed toward goal A. He is prohibited by the barrier, person B. Person A relinquishes his goal A and adopts no

other goal. He leaves the situation.

5. Second Level of Dominant Behavior. Person A is directed toward goal A. He is prohibited by person B. Person A relinquishes his goal A and adopts goal B reluctantly. (Emotion or feeling tone expressed.)

6. First Level of Dominant Behavior. (Least Dominant) Person A is directed toward goal A. He is prohibited by person B. Person A relinquishes his goal and adopts goal B.

The above hierarchy depends upon the two dimensions used in the preliminary investigation.<sup>4</sup> The six levels of dominant behavior, with their dimensions, are given in table VI. The hierarchy is logically arranged on the two dimensions, (1) manipulation of the barrier to being manipulated by the barrier, and also (2) the retention of goal A to the relinquishing of goal A. If the third level were omitted, the hierarchy would then be logically arranged on the degree of adoption of the other goal. It was necessary, however, to retain this level because (1) it was a possible response to the situations and (2) there was logically no other level it could be incorporated with. The third level was thought, thus, to be justifiably included. This hierarchy of the six levels of dominant behavior was used to infer the

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<sup>4</sup> See page 29 of this report for the two dimensions of the levels of dominant behavior.

TABLE VI

**SIX LEVELS OF DOMINANT BEHAVIOR  
AND THEIR DIMENSIONS**

DOMINANT BEHAVIOR	BARRIER	GOAL
Sixth Level	Manipulation of barrier.	Attainment of goal A. No adoption of goal B.
Fifth Level	{Indirect} manipulation of barrier.	Attainment of goal A. No adoption of goal B.
Fourth Level	Manipulation of barrier, and manipulated by barrier.	Partial attainment of goal A. Partial adoption of goal B.
Third Level	Manipulation of barrier, and manipulated by barrier.	Relinquishing of goal A. No adoption of goal B.
Second Level	Manipulated by barrier.	Relinquishing of goal A. Partial adoption of goal B.
First Level	Manipulated by barrier.	Relinquishing of goal A. Adoption of goal B.

level of the dominance attitude.

Variables. The ten situations which were mentioned in the "construction of activities,"<sup>5</sup> were used as constant stimuli for all subjects. Their responses<sup>6</sup> were analyzed in the two ways mentioned in chapter III, viz. qualitatively and quantitatively. Each individual was given a composite level of dominance score which was attained by adding all the scores on each situation. The summary of these scores are given in table VII.

In the counting of each grammatical category, it was necessary to eliminate the influence of the total production. Each grammatical category, therefore, was divided by the total number of responses in each class, viz. subjects of intransitive verbs, subjects of transitive verbs, subjects of passive verbs, direct objects, indirect objects, and adjectives of subjects. The form as presented in table VIII was used to tabulate the data for the grammatical categories.

Grammatical Category One. The ratio score representing the grammatical category of subjects of intransitive verbs which are barriers was obtained in the following manner:

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5 See pages 60-62 of this report for the ten situations.

6 As examples, the responses of nine subjects are listed in Appendix A; three are on high level of dominant behavior, three on the medium level of dominant behavior, and three on the low level of dominant behavior.

TABLE VII

COMPOSITE DOMINANCE SCORES FROM  
SIX LEVELS OF DOMINANT BEHAVIOR

SUBJECT*	COMPOSITE LEVEL OF DOMINANCE
1	56
2	58
3	55
4	44
5	49
6	40
7	30
8	30
9	31
10	40
11	42
12	34
13	46
14	52
15	43
16	40
17	35
18	39
19	46
20	34
21	44
22	51
23	45
24	47
25	34
26	43
27	51
28	41
29	43
30	30
31	45
32	53
33	40
34	40
35	33
36	38

\* Subjects 1-9 are the same subjects 1-9 in Appendix B.

TABLE VIII

## TABULATION SHEET

GRAMMATICAL CATEGORY		SITUATION										TOTAL
		1	2	3	4	5	6	7	8	9	10	
TRANSITIVE	SUBJECT	BARRIER (1)										
		NON-BAR.(2)										
	DIR. OBJ.	BARRIER (3)										
		NON-BAR.(4)										
	IND. OBJ.	BARRIER (5)										
		NON-BAR.(6)										
INTRANSITIVE	SUBJECT	BARRIER (7)										
		NON-BAR.(8)										
PASSIVE	SUBJECT	BARRIER (9)										
		NON-BAR.(10)										
ADJECTIVE	SUBJECT	BARRIER (11)										
		NON-BAR.(12)										
NUMBER OF WORDS (13)												

the number of times the barrier was used as the subject of intransitive verbs was divided by the total number of subjects of intransitive verbs. This corresponded to category seven divided by category seven and eight in table VIII.

Grammatical Category Two. The ratio score representing the grammatical category of subjects of transitive verbs which are barriers was obtained in the following manner: the number of times the barrier was used as the subject of transitive verbs was divided by the total number of subjects of transitive verbs. This corresponded to category one divided by category one and two in table VIII.

Grammatical Category Three. The ratio score representing the grammatical category of subjects of passive verbs which are barriers was obtained in the following manner: the number of times the barrier was used as the subject of passive verbs was divided by the total number of subjects of passive verbs. This corresponded to category nine divided by category nine and ten in table VIII.

Grammatical Category Four. The ratio score representing the grammatical category of direct objects which are barriers was obtained in the following manner: the number of times the barrier was used as the direct object was divided by the total number of direct objects. This corresponded to category three divided by category three and four in table VIII.

Grammatical Category Five. The ratio score representing the grammatical category of indirect objects which are barriers was obtained in the following manner: the number of times the barrier was used as the indirect object was divided by the total number of indirect objects. This corresponded to category five divided by category five and six in table VIII.

Grammatical Category Six. The ratio score representing the grammatical category of adjectives modifying subjects which are barriers was obtained in the following manner: the number of adjectives used to modify the subject, when it was the barrier, was divided by the total number of adjectives modifying the subject. This corresponded to category eleven divided by category eleven and twelve in table VIII.

## II. PROCEDURE

The preliminary steps were the same as those mentioned for the preliminary investigation.<sup>7</sup> The instructions were modified slightly. They were as follows:

I shall describe to you a series of situations. You are to imagine yourself in them. When I am through describing each situation, you are to talk as if you were speaking to the other person. There is no right or wrong thing you should say. The best thing is to speak as

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<sup>7</sup> See page 44 of this report for the preliminary steps.

naturally as you can and say what comes to your mind first. Also, make up an outcome to the situation. Let's try this:

You are speaking to Jane about some plans for a tea. While you are talking, Beatrice interrupts and starts talking to Jane. What will you say to Beatrice? (The subject would give a response; and if she responded in accordance with the instructions, the experiment was begun. If the subject appeared confused as to what to say, she was helped along until she understood.

The ten situations were then presented verbally, one by one, in the following order.

1. You have gone to a theatre to see a movie. As you go down into the theatre, you are stopped by the usher who tells you there are no more seats down there. However, you can see some seats ahead; and you would like to sit there. What will you say to the usher?

2. You are looking desperately for a woman to do your house cleaning. You have interviewed many women, but they have all been unsatisfactory. You are now talking to Isabelle, who seems to be just whom you want. Isabelle, however, wants seventy-five cents an hour. You can pay sixty-five cents at the most. What will you say to Isabelle?

3. You and Jack are co-chairmen for the decoration of a hall for a dance. You would like to have rather an elaborate set-up and have the place look nice for the event. Jack would like to keep the decorations as simple as possible, so it wouldn't take much work. What will you say to Jack?

4. You are at a toy counter to buy some toys. You are in a hurry. It is now your turn to be waited on, but the salesgirl waits on the person who came after you. What will you say to the salesgirl?

5. A saleswoman has come to your home. She takes a great deal of pains to show you all the various kinds of cosmetics she carries. You are not especially interested in what she has to offer and do not wish to buy anything. What will you say to the saleswoman?

6. You have heard that Judy is spreading an unjustified and uncomplimentary rumor about you. You meet Judy in the hallway. What will you say to her?

7. You have taken your shoes to the cobbler's to be fixed. He said they would be ready in a week. A week later you go to the cobbler's, and he tells you he has "only just begun work on them," and "to come back the next day." You were planning to wear them that evening. What will you say to the cobbler?

8. You have made an appointment with the secretary to see Dr. Irving. You go at the designated time. The secretary tells you, you must make an appointment to see Dr. Irving, and says you have not made one. What will you say to the secretary?

9. You are at the beauty parlor. You want your hair fixed the same way as usual. The beautician suggests that

another hairdo at the same price might be more becoming to you. What will you tell her?

10. You are living at a dormitory. There is a regulation that if anyone should stay out later than 9 p.m. on any week day, she must forfeit her evening privileges for the next two weeks. This is Wednesday night. You have been out. You are just now coming in at 9:30. The next two weeks are very busy and important weeks for you. Many things are scheduled for the evenings. As you come in the door the housemother says "You are late." What will you say?

In this chapter, the experimental design was made explicit. The manner of selection of the subjects and the management of the several controls were explained. The stimulus situations were described. The procedure used in the experimentation was outlined.

## CHAPTER V

### ANALYSES OF DATA

The scoring procedure is made explicit in the present chapter. The results of the statistical analysis are given. For convenience, the chapter is organized into the following three headings: (1) Qualitative Analysis of Data, (2) Quantitative Analysis of Data, and (3) Statistical Analysis.

#### I. QUALITATIVE ANALYSIS OF DATA

In accordance with the criteria of dominance set down in chapter IV,<sup>1</sup> the responses made by the subjects to the ten experimental situations were analyzed qualitatively. Table VII<sup>2</sup> shows the composite level of dominance score for each subject. An illustration of how these scores were obtained from the responses is supplied below.

Sixth Level of Dominant Behavior. (A response to situation eight.) Well, I believe I have made an appointment; and, if you will please check the record book, I think you will find the appointment. And would you do that

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1 See pages 63 and 64 of this report for the six levels of dominant behavior.

2 See page 67 for table VII.

for me, please? The result would be that she would check it. She would let me in to see Dr. Irving.

Fifth Level of Dominant Behavior. (A response to situation two.) I'd explain that I'm paying only sixty-five and try to come to some terms with her. And, if not, then I'd have to let her go.

Fourth Level of Dominant Behavior. (A response to situation seven.) Oh, is it possible to have them fixed while I wait? If he said no, well, I have a little more shopping to do; and then, I'll come back in about an hour and see if they're ready then. He probably would have them ready.

Third Level of Dominant Behavior. (A response to situation four.) I'd walk out and say nothing.

Second Level of Dominant Behavior. (A response to situation seven.) He's probably busy, very busy. Maybe he didn't have time. I would be disappointed though . . . because he's the cobbler. (Will you just leave them?) I have to.

First Level of Dominant Behavior. (A response to situation ten.) I'd agree with her and tell her why, if I had a good reason. I'd tell her why anyhow and settle with her there, as it would be in all cases whenever one is late on a week night; and I'd stay in the next two weeks.

## II. QUANTITATIVE ANALYSIS OF DATA

The various grammatical categories were counted for each subject. Table IX summarizes the ratio scores for each grammatical category. The quantitative scoring system was explained in chapter III<sup>3</sup> for the preliminary investigation. Since the present experiment was concerned, however, with slightly different grammatical categories, it is desirable to give an example of the quantitative scoring system. The following response of subject S,<sup>4</sup> situation five, serves as the illustration.

I'd tell her that I don't usually use them anyhow or that I am never in a position to buy anything much anyhow, unless I need it; and if I needed it, I wouldn't wait for a salesman to come.

<u>Grammatical Category</u>	<u>Frequency</u>
1. Transitive verb, barrier as subject.	0
2. Transitive verb, non-barrier as subject.	4
3. Transitive verb, barrier as direct object.	0
4. Transitive verb, non-barrier as direct object.	3
5. Transitive verb, barrier as indirect object.	1

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<sup>3</sup> See pages 50-53 of this report for the quantitative scoring system.

<sup>4</sup> See appendix A.

TABLE IX

RATIO SCORES FOR SIX  
GRAMMATICAL CATEGORIES

SUBJECT	GRAMMATICAL CATEGORY					
	1	2	3	4	5	6
1	.38	.12	.00	.02	.25	.06
2	.39	.23	.33	.00	.80	.12
3	.32	.42	.00	.04	.67	.13
4	.31	.08	.00	.09	.64	.00
5	.32	.21	.00	.15	.67	.00
6	.22	.26	.00	.04	1.00	.15
7	.15	.31	.00	.10	1.00	.22
8	.18	.11	.50	.12	.85	.14
9	.29	.31	.50	.08	1.00	.43
10	.30	.37	.00	.06	1.00	.12
11	.19	.24	.00	.10	.78	.18
12	.40	.39	.66	.23	1.00	.00
13	.06	.45	.00	.06	1.00	.19
14	.25	.40	.20	.07	.00	.00
15	.10	.43	1.00	.11	.66	.00
16	.24	.16	.40	.09	.66	.08
17	.13	.33	.00	.07	1.00	.11
18	.17	.25	.00	.06	.60	.04
19	.21	.47	.00	.06	.66	.00
20	.49	.43	.60	.09	.86	.00
21	.31	.43	.50	.12	.41	.28
22	.20	.36	.00	.29	1.00	.21
23	.26	.23	.20	.17	.81	.10
24	.13	.25	.00	.09	.82	.08
25	.15	.16	.00	.10	1.00	.00
26	.26	.62	.00	.00	.85	.00
27	.26	.12	.30	.13	.73	.08
28	.23	.36	.00	.22	.85	.12
29	.18	.18	.00	.05	.92	.20
30	.12	.09	.90	.21	.88	.15
31	.26	.42	.00	.08	1.00	.13
32	.30	.56	.00	.06	.64	.00
33	.25	.54	.00	.24	.75	.19
34	.37	.43	.00	.04	.80	.04
35	.36	.30	.70	.31	.62	.20
36	.27	.30	.00	.00	.86	.00

<u>Grammatical Category</u>	<u>Frequency</u>
6. Transitive verb, non-barrier as indirect object.	0
7. Passive verb, barrier as subject.	0
8. Passive verb, non-barrier as subject.	0
9. Intransitive verb, barrier as subject.	0
10. Intransitive verb, non-barrier as subject.	2

Ratio scores for the grammatical categories were then computed from the above frequencies. The factor for the numerator and the factor for the denominator were explained in chapter IV.<sup>5</sup>

Nine complete sets of responses to the ten situations are found in appendix A. Their qualitative analysis is supplied in appendix B, and their quantitative analysis is supplied in appendix C.

It is necessary to point out, at this time, the nature of the various grammatical categories. The Harbrace College Handbook was again<sup>6</sup> utilized as the definitive guide for determining the parts of speech involved in this experiment.

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<sup>5</sup> See pages 66-70 of this report for the computation of the ratio scores.

<sup>6</sup> It was previously utilized in the preliminary investigation reported in chapter III.

The following definitions of the parts of speech were used in the present study.

Intransitive Verb. A verb that does not require a receiver of the action to complete its meaning.<sup>7</sup>

Transitive Verb. A verb requiring a receiver of the action to complete its meaning.<sup>8</sup>

Passive Verb. The form of the verb which shows that the subject is being acted upon.<sup>9</sup>

Subject. The person or thing (in a sentence or a clause) about which an assertion is made.<sup>10</sup>

Direct Object. Any noun (or its equivalent) that receives the action of a transitive verb.<sup>11</sup>

Indirect Object. A term applied to a noun or pronoun that precedes the direct object.<sup>12</sup>

Adjective. A word used to modify (i.e., describe or limit) a noun or pronoun.<sup>13</sup>

Reliability of Scoring. The records of two subjects' responses on the ten situations were taken at random and

7 John C. Hodges, Harbrace College Handbook (New York: Harcourt Brace and Company, 1946), p. 417.

8 loc. cit.

9 Ibid., p. 412.

10 Ibid., p. 416.

11 Ibid., p. 411.

12 loc. cit.

13 Ibid., p. 398.

and another person was given instructions how and what to count. A Pearson Product Moment Correlation was computed between the scores. For one subject the correlation was .955 and for the other it was .932.

### III. STATISTICAL ANALYSIS

The data was arranged in the manner described in chapter III,<sup>14</sup> and a correlation was computed between the composite level of dominance score and each grammatical category ratio. The results are given in table X. Thirty-six subjects were used in the present experiment. The degrees of freedom for correlation is  $N-2$ .<sup>15</sup> Therefore, there were thirty-four degrees of freedom. A correlation of .329 is minimally necessary for significance at the five per cent level; and a correlation of .425 is minimally necessary for significance at the one per cent level. Of the six correlations, three were significant at the one per cent level; one at the five per cent level; and two were non-significant. By chance, it is expected to have one

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<sup>14</sup> See page 44 of this report for the arrangement of the data.

<sup>15</sup> Allen L. Edwards, Statistical Analysis for Students in Psychology and Education (New York: Rinehart and Company, Inc., 1946), p. 188

TABLE X

CORRELATIONS OBTAINED BETWEEN COMPOSITE  
SCORES FROM SIX LEVELS OF DOMINANT BEHAVIOR  
AND GRAMMATICAL CATEGORIES

GRAMMATICAL CATEGORY*	OBTAINED CORRELATION
1	.482**
2	.155
3	-.521**
4	-.376***
5	-.429**
6	-.185

\* See pages 66-70 of this report for grammatical categories.

\*\* Significant at one per cent level.

\*\*\* Significant at five per cent level.

correlation out of twenty significant at the five per cent level. It can thus be concluded that the obtained results were above chance.<sup>16</sup>

In summary, then, the present chapter has involved (1) an explanation of how the qualitative and quantitative analyses of the responses were accomplished and (2) a tabulation and statistical manipulation of the scores thus obtained.

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<sup>16</sup> Although no covering hypotheses had been derived from the relationship outlined in chapter III, in order to secure possible bases for extension of the theory for later research, the experimenter while counting the above grammatical categories also counted some others, e.g. the "ifs," "pronoun or noun subjects," and "adverbs." Various ratio scores were made and correlated with the composite level of dominance score. None of the correlations were significant.

## CHAPTER VI

### RECLASSIFICATION AND STATISTICAL ANALYSIS

Reconsideration of the experiment explained in chapter IV raised certain issues that warranted further investigation. There was a question about the justification for six levels of dominant behavior, that is, whether all six levels were actually possible reactions to all the situations. Furthermore, the appropriateness of the numerical value assigned each level appeared debatable on logical grounds. In order to meet these criticisms, a reclassification of the data was performed. The present chapter is concerned with this method of reclassification and subsequent statistical results.

#### I. RECLASSIFICATION

Levels of Dominance. An analysis of the situations and the possible responses to them indicated that responses corresponding to all six levels of dominant behavior actually could not logically be elicited from each situation. It was determined that three levels of dominance were, however, empirically obtainable responses from each situation. The three levels were as follows:

Third Level of Dominant Behavior (Most Dominant). Person A is directed toward goal A. He is prohibited by the barrier, person B. He manipulates person B and reaches his own goal, A.

Second Level of Dominant Behavior. Person A is directed toward goal A. He is prohibited by person B. Either person A and person B modify their goals and adopt another goal AB which is held in common between them, or person A cannot make up his mind whether to retain his own goal A or to adopt goal B or some other goal.

First Level of Dominant Behavior (Least Dominant). Person A is directed toward goal A. He is prohibited by person B. Person A relinquishes his goal and adopts goal B.

Reclassification of Data. The responses of all the subjects were rescored qualitatively for levels of dominant behavior by four independent judges.<sup>1</sup> The following instructions were given.

Rate each of these responses by assigning them to three different classes. These classes are called one, two, and three. If you find a response which you believe expresses the least dominant behavior, give it a number one. For a response which seems to be the intermediate dominant behavior, give it a number two. For a response which expresses the most dominant behavior, assign it a number three. The three types of behavior are explained below.

The least dominant behavior is where the

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<sup>1</sup> According to Joy P. Guilford Psychometric Methods (McGraw-Hill Book Company Inc., New York, 1936), p. 279, the reliability and validity of ratings increase with the number of judges. The pooled ratings of not less than three independent judges are to be used.

person concerned, namely "you," relinquishes his goal and adopts the goal of the barrier.

The intermediate dominant behavior is where the person concerned, namely "you," compromises or vacillates between his own goal and the barrier's goal.

The most dominant behavior is where the person concerned, namely "you," overcomes the barrier and reaches his goal.

The ratings<sup>2</sup> were then subjected to a discriminant analysis.

## II. STATISTICAL ANALYSES

Discriminant Analysis. The purpose of a discriminant analysis<sup>3</sup> is to obtain for each individual a set of appropriate scores based on the principle of maximizing the ratio of the sum of squares due to variation of scores between individuals to the total sum of squares. In the present research this scoring procedure maximizes the differences among the individuals in terms of the three levels of dominant behavior. The composite level of dominance better represents a given individual's dominance attitude because it is made up of scores which discriminate maximally among the individuals.

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2 All the ratings by the four judges are in appendix D.

3 Palmer O. Johnson, "The Quantification of Qualitative Data in Discriminant Analysis." Journal of the American Statistical Association. 45:65-76, No. 249, March, 1950.

The statistical procedure outlined in Johnson's article was followed. For the three levels of dominant behavior, which were in a hierarchical order, the least dominant behavior was given a score of "0" and the most dominant behavior a score of "1." It was necessary, therefore, to find only the score of the intermediate behavior. As a result of the discriminant analysis, the score obtained was 0.4749. Since this was so close to 0.50, it was felt justifiable to use the latter value for ease of computation.

The scores 0, 0.5, and 1.0 have the same relationship to each other as the scores 0, 1, and 2. Since the latter set was easier to work with, it was used for the statistical analysis which followed.

Composite Level of Dominance Score. Each subject was characterized by a single score which represented his level of dominance. The score was obtained as related below. The total number of least dominant ratings was multiplied by "0" (score for the least dominant behavior) and added to the total number of intermediate dominant ratings multiplied by "1" (score for the intermediate dominant behavior). That sum was in turn added to the total number of the most dominant ratings multiplied by "2" (score for the most dominant behavior). The following example shows how the composite level of dominance score was obtained:

	<u>Frequency(f)</u>	<u>Score(s)</u>	<u>f x s</u>
Least Dominant Behavior	7	0	0
Intermediate Dominant Behavior	23	1	23
Most Dominant Behavior	10	2	20
Composite Level of Dominance Score			43

Table XI gives the list of the thirty-six subjects and their respective composite level of dominance scores.

Correlations. The data was arranged in the identical manner as explained in chapter III,<sup>4</sup> and a Pearson Product Moment Correlation was computed between the composite level of dominance score and each grammatical category. Table XII is a summary of the obtained correlations. Three of the correlations were significant at the one per cent level, one at the five per cent level, and two were non-significant. Table XIII is the comparison of the correlations obtained by the six category scale with the three category scale. The magnitude of the correlations varied a little; nevertheless, the same significant relationships existed. Thus, the results obtained from the discriminant analysis are consistent with the results obtained from the six category scale.

To recapitulate briefly, for reclassification the

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<sup>4</sup> See page 44 of this report for the arrangement of the data.

TABLE XI

THE COMPOSITE LEVEL OF DOMINANCE  
SCORES FOR THREE LEVELS OF  
DOMINANT BEHAVIOR

SUBJECT	SCORE
1	64
2	70
3	59
4	45
5	46
6	42
7	43
8	34
9	36
10	50
11	38
12	40
13	63
14	49
15	43
16	30
17	45
18	41
19	56
20	37
21	41
22	60
23	42
24	54
25	36
26	42
27	49
28	43
29	39
30	29
31	48
32	57
33	41
34	48
35	32
36	33

TABLE XII

CORRELATIONS OBTAINED BETWEEN COMPOSITE  
SCORES FROM THREE LEVELS OF DOMINANT BEHAVIOR  
AND GRAMMATICAL CATEGORIES

GRAMMATICAL CATEGORY*	OBTAINED CORRELATION
1	.560**
2	.072
3	-.476**
4	-.494**
5	-.346***
6	-.120

\* See pages 66-70 of this report for grammatical categories.

\*\* Significant at one per cent level.

\*\*\* Significant at five per cent level.

TABLE XIII

CORRELATIONS OBTAINED FROM THREE CATEGORY AND SIX CATEGORY SCALE OF DOMINANT BEHAVIOR

GRAMMATICAL CATEGORY	THREE CATEGORY	SIX CATEGORY
1	.540**	.482**
2	.072	.155
3	-.476**	-.521**
4	-.494**	-.376***
5	-.346***	-.429**
6	-.120	-.185

\*\* Significant at one per cent level.

\*\*\* Significant at five per cent level.

levels of dominant behavior were reduced to three on the justification that a response on only these levels was logically possible from each situation. Since the six levels of dominant behavior could not be justified on this basis, it was discarded and the three levels of dominant behavior accepted. Discriminant analysis justified the numerical value assigned to each of the three levels (categories) of dominant behavior.

In this chapter, then, the three category classification of the responses was explained. The purpose of the discriminant analysis was made explicit. The results obtained therefrom were inspected and compared with the results from the six category scale reported in chapter V.

## CHAPTER VI

### THEORETICAL FORMULATION OF PRESENT RESEARCH

In this chapter an attempt is made to "explain" the results obtained from the reported experiments. The survey of literature in chapter I tended to support the general hypothesis that personality is expressed in language. The material in chapter II led to the further hypothesis that dominance is an important component of personality. Through logical manipulation, the specific hypothesis arose that dominance is expressed in various aspects of language and, specifically, in the selection of words used in certain grammatical categories. The results from the preliminary investigation, reported in chapter III, gave some indication as to how dominance is expressed in given grammatical categories. Further experimentation supported this indication. It is now necessary to formulate a theory to cover the relationship.

#### I. THEORY CONSTRUCTION

Krech and Crutchfield<sup>1</sup> postulate that perception is

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1. David Krech and Richard S. Crutchfield, Theory and Problems of Social Psychology (New York: McGraw-Hill Book Company, Inc., 1948), p. 107.

influenced by systems in tension<sup>2</sup> in the psychological field. The psychological field is the psychological existence, the experienced world, of the individual.<sup>3</sup>

The psychological field is inferred from overt behavior, introspective reports, and projective tests. The systems in tension in the psychological field are motivational, emotional, cognitive, and perceptual. They induce goals which the individual strives for; they direct the individual's perception and thinking; and they reorganize the psychological field.

An attitude is a relatively enduring state of tension which arises from the organization of the various systems in the psychological field.<sup>4</sup> It is concerned with some specific object. This object is perceived as demanding some type of action on the part of the individual. This demand for action is the actual tension system that seeks reduction through behavior. The three levels of dominant behavior, as defined in chapter VI, are concerned with a specific

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2 Ibid., pp. 40-50. Tensions are instabilities, such as disharmonies, discrepancies, and imbalances, in the psychological field. Tension is a hypothetical construct postulated to account for the source of force correlated with a need or attitude.

3 Ibid., p. 37.

4 Ibid., p. 153.

object, namely the barrier. The way in which the barrier is perceived is determined by the level of dominance. Since the goal of the barrier and the goal of the highest level of dominant behavior are opposed to each other, the result of the opposed forces creates a tension.<sup>5</sup> The barrier is perceived as demanding action on the part of the individual. The tension (demand for action) is reduced by manipulating the barrier.<sup>6</sup> Person B, in the specific situations was the barrier. For the lowest level of dominant behavior the tension also exists; but, because the need for the attainment of the goal is not as great, it is not as much as for the highest level of dominant behavior. The barrier, in this instance, is perceived as something not to attack but rather to conform to. The barrier, then, is, in turn, more tension creating the higher the level of dominance. Therefore, it seems a logical assumption to make the statement that the perceived barrier is a functionally more significant object and is thus more the focus of attention for an individual the higher the level of dominance he possesses.

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<sup>5</sup> Robert W. Leeper. Lewin's Topological and Vector Psychology (Eugene, Oregon: University of Oregon, 1943), p. 216.

<sup>6</sup> Ibid., p. 203. Barriers as objective obstructions may be defined as Lewin defined barriers in general: factors that offer resistance to (actual) locomotion, whether physical, social, or conceptual.

Kreeh and Crutchfield state: "Instabilities in the psychological field produce 'tensions' whose effects on perception, cognition, and action are such as to tend to change the field in the direction of a more stable structure."<sup>7</sup> Thus, not only is perception influenced by tension, as stated above, but behavior (action) is also. Speech, as a special form of behavior, must, therefore, also be viewed as organized in the direction of tension reduction. Grammatical categories that compose verbal behavior are communicative tools<sup>8</sup> that are avenues for the release of tension. Commerce with each grammatical category is a response which contributes to the release of the tension. In the present study, the tension that seeks reduction through verbal behavior corresponds to the demand for action elicited by the perception of the barrier. The perception of the barrier is, in turn, determined by the level of dominance of the subjects.

Certain grammatical categories, by virtue of rhetoric principles (emphasis, unity, coherence), are more vital tools of communication than others. In the present research,

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7 Kreeh and Crutchfield, op. cit., p. 40.

8 Edward C. Tolman, Purposive Behavior in Animals and Men (New York: The Century Company, 1932), p. 454.

the principle of emphasis<sup>9</sup> was used as an explanatory concept. According to rhetoric rules of English grammar,<sup>10</sup> the subject of a sentence is a point of emphasis by virtue of primacy in the sentence. The verb is also a point of emphasis by virtue of the fact that it is the "heart" of the sentence.<sup>11</sup> Other parts of the sentence, such as the direct and indirect objects, lack emphasis because of their secondary (in terms of time) and complementary (in terms of meaning) role. It can be concluded that the subject and the verb are the more vital tools for emphasis.

The above grammatical categories, being part of the communicative system of English, are avenues for the release of tension produced by the cognitive organization associated with the various levels of dominance. It seems a logical assumption to make the statement that, in order to gain emphasis, the focus of attention will be placed on the more vital parts of the communicative system. Then it would follow that the person with a high level of dominance

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9 Emphasis may be conceptualized as the state of being in the focus of awareness as against being relegated to the margin of attention. A thing is emphasized when it is a figure in perception with everything else in perception simply (back-) ground.

10 John C. Hodges, Harbrace College Handbook (New York: Harcourt Brace and Company, 1946), p. 284.

11 Ibid., p. 2.

will ordinarily use the barrier as the subject of the verb of the sentence more often than the person with a lower degree of dominance. Now, the intransitive verb is complete enough in and of itself to communicate thought.<sup>12</sup> Then, it follows, to gain the greatest amount of emphasis, the person with a high level of dominance will use the barrier as the subject of the intransitive verb more often than the person with a lower level of dominance.<sup>13</sup> The transitive verb connects the subject with the object. The subject is mentioned first, thus emphasized. The person with a high level of dominance will use the barrier as the subject of transitive verbs more often than the person with a lower level of dominance.<sup>14</sup> The passive verb, being a part of the transitive category, has a peculiar construction. The grammatical subject is functionally the object of the verb. For example, "The bird was shot." "Bird" is grammatically the subject of the sentence. Functionally, however, it is

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12 For example, in the sentence "The man rested," the thought is completed in the intransitive verb "rested"; nothing else is actually needed.

13 e.g. More dominant: "The usher (barrier) came up to me."  
Less dominant: "I went up to the usher."

14 e.g. More dominant: "The usher (barrier) refused me the seats."  
Less dominant: "I didn't get the seats from the usher."

the object of the verb "was shot." The grammatical subject of the passive verb, being the object, becomes a less vital tool for emphasis. The person with a high level of dominance wishing to put the focus of attention, or barrier, in the more vital parts of the communicative system will use the barrier as the subject of passive verbs less often than the person with a lower level of dominance.<sup>15</sup>

In the statements above, only person B, perceived as the barrier, was mentioned. Other aspects of the perceptual field, namely the goal of the barrier, one's own goal, and one's self, are considered next. These are referred to as "things other than the barrier."

The person with a high level of dominance perceives the things other than the barrier as secondary and not requiring emphasis. Therefore, he will put them in the less vital aspects of the communicative system. The person with a high level of dominance will use things other than the barrier as direct objects more often than a person with a lower level of dominance.<sup>16</sup> The person with a high level

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15 e.g. More dominant: "The seats (non-barrier) were not taken."

Less dominant: "The usher (barrier) was approached by me."

16 e.g. More dominant: "The usher (barrier) called me (non-barrier)."

Less dominant: "I (non-barrier) called the usher (barrier)."

of dominance will use things other than the barrier as indirect objects more often than a person with a lower level of dominance.<sup>17</sup> Another method of increasing the emphasis on the subject as focus of attention, other than the use of intransitive verbs, is to modify it by means of adjectives. Then, the following statement can be made: the person with a high level of dominance will use more adjectives to modify the subject when it is the barrier than the person with a lower level of dominance.<sup>18</sup>

From the above conceptualization of the relationship between levels of dominance and certain grammatical categories, the following psychological hypothesis can be stated.

The tools of communication are selected so as to express tensions produced by the cognitive organization associated with levels of dominance.

The relationship between the attitude of dominance and various grammatical categories which were made explicit above are now restated in the form of empirical hypotheses.

Empirical Hypotheses. 1. An individual with a high

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17 e.g. More dominant: "The usher (barrier) showed me (non-barrier) the seats."  
Less dominant: "I told the usher (barrier) no thank you."

18 e.g. More dominant : "The tall usher (barrier) beckoned."  
Less dominant : "The usher (barrier) beckoned."

score on the dominance hierarchy will use the person placed as the barrier to his assigned goal as the subject of intransitive verbs more often than a person with a lower score.

2. An individual with a high score on the dominance hierarchy will use the person placed as a barrier to his assigned goal as the subject of transitive verbs more often than a person with a lower score.

3. An individual with a high score on the dominance hierarchy will use the person placed as a barrier to his assigned goal less often as the subject of passive verbs than a person with a lower score.

4. An individual with a high score on the dominance hierarchy will use things other than the barrier more often as direct objects than a person with a lower score.

5. An individual with a high score on the dominance hierarchy will use things other than the barrier more often as indirect objects than a person with a lower score.

6. An individual with a high score on the dominance hierarchy will modify the subject, when it is the person placed as a barrier to his assigned goal, more often than a person with a lower score.

The grammatical category ratios<sup>19</sup> and the level of

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<sup>19</sup> See pages 66-70 of this report for an explanation of the grammatical category ratios.

dominance scores now become the representations of the above empirical hypotheses. The results from the statistical analyses<sup>20</sup> suggest that the psychological hypothesis may be accepted with a fair degree of confidence. The lowness of the significant correlations (tests of the empirical hypotheses) might be attributed to several factors: (1) the experimental design did not allow for the best possible conditions under which the results could be obtained. Since the middle of any hierarchy or scale is not as differentiating as the ends, it would have been better to use subjects of the two extreme levels of dominance, if it had been possible to get enough, rather than subjects scattered throughout all the levels; (2) there might well be other tensions in the cognitive structure, which are associated with other personality components operating at the same time, which might cancel out some of the effects; (3) things other than the barrier, namely the goal, self, and another goal, must be mentioned by the subjects in responding to the given situations. No individual, no matter how high the level of dominance he has, can use only the non-barrier things as the direct or indirect object, or as the subject

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<sup>20</sup> See page 87 of this report for the results of the statistical analyses.

of passive verbs. Henle and Hubbell<sup>21</sup> found that adults make reference to the self just as often as the child, about forty per cent of the time. Thus, it becomes necessary even for a person on a high level of dominance to use sometimes non-barrier things as subjects of transitive and intransitive verbs.

The grammatical categories involved in the non-significant correlations were as follows: (1) subject of transitive verbs which are barriers and (2) adjectives modifying subjects which are barriers. The results might be explained in the following manner. An adjective modifying a subject may be a word preceding the subject (for example, "The mad saleswoman picked up her things and left.") or a word following it (for example, "The saleswoman was mad and left."). In the latter case, there would be a copulative construction; but the copulative construction was not counted per se, nor was its relationship to levels of dominance made explicit. Nevertheless an adjective was counted as modifying the subject, if it appeared in the predicate nominative of the copulative construction. Since the count for the adjective category contained the two forms, it is possible that one cancelled the other out. Nevertheless, the empirical

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<sup>21</sup> See page 10 of this report for Henle and Hubbell's findings.

hypothesis six was tested. The results suggest that the theory should have been extended to more grammatical categories. As far as the other non-significant correlation is concerned, an inspection of the transitive and intransitive verbs in the English language indicates that there are many more transitive verbs. Since the transitive construction is the most common in the English language and since, therefore, a person even with a high level of dominance may have to use non-barrier things as the subject of transitive verbs simply by virtue of the demands of variety, a non-significant correlation may be expected.

This chapter attempted a theory of language which would explain the relationship between the attitude of dominance and the various grammatical categories. The theory was inspected for agreements and disagreements with the obtained data. Where the data did not agree with hypothesized relationships indicated in the theory, an explanation was attempted.

## CHAPTER VIII

### SUMMARY AND IMPLICATIONS FOR FURTHER RESEARCH

The present chapter contains a brief summary of the content and conclusions of the preceding chapters. Finally, problems which have been raised but which require research beyond the limits of the investigation reported are discussed.

#### I. SUMMARY

The material in the foregoing seven chapters can be summarized as follows. First, the literature on the general relationship between personality and language was reviewed, with special emphasis on those studies dealing with the relationship between personality and grammatical categories (quantitatively considered). Dominance as a special aspect of personality was chosen as a specific personality component to be related in the present study to grammatical categories. Relevant literature dealing with dominance was reviewed in chapter II, and a final definition of dominance arrived at by close examination of previous conceptualizations. Chapter III concerned itself with the explanation of the preliminary investigation, the purpose of which was to gain some guide as to the relationship between dominance and grammatical categories. From a combination of the high and

low correlations a relationship was hypothesized. This led to the delineation of six grammatical categories to be investigated. They were as follows:

1. Subjects of intransitive verbs that are barriers.
2. Subjects of transitive verbs that are barriers.
3. Subjects of passive verbs that are barriers.
4. Direct objects that are barriers.
5. Indirect objects that are barriers.
6. Adjectives of subjects that are barriers.

The experiment testing the relationship of the six grammatical categories to dominance was explained in chapter IV. The next chapter consisted of the statistical analysis and the results. Since the results raised certain issues, a reclassification of the responses was performed, and the statistical analyses thereof were conducted. These were reported in chapter VI. The results from the reclassification were consistent with the results obtained from the previous experiment. Chapter VIII entailed an original theoretical formulation of the relationship between levels of dominance and certain grammatical categories, namely the six mentioned above. The conceptual schema of Krech and Crutchfield was primarily utilized to this end. A psychological hypothesis postulating the relationship between the two factors was stated as follows: The tools of communication

are selected so as to express tensions produced by the cognitive organization associated with levels of dominance. The empirical hypotheses to test the above psychological hypothesis were the following.

1. An individual with a high score on the dominance hierarchy will use the barrier as the subject of intransitive verbs more often than a person with a lower score.

2. An individual with a high score on the dominance hierarchy will use the barrier as the subject of transitive verbs more often than a person with a lower score.

3. An individual with a high score on the dominance hierarchy will use the barrier less often as the subject of passive verbs than a person with a lower score.

4. An individual with a high score on the dominance hierarchy will use things other than the barrier more often as direct objects than a person with a lower score.

5. An individual with a high score on the dominance hierarchy will use things other than the barrier more often as indirect objects than a person with a lower score.

6. An individual with a high score on the dominance hierarchy will modify the subject, when it is the barrier, more often than a person with a lower score.

Four of the above empirical hypotheses were confirmed by correlations significant at the one per cent or at the

five per cent level. The correlations, however, were low. Possible explanations for their lowness were offered. The two empirical hypotheses, namely 2 and 6, which were not confirmed by significant correlations were also discussed. Four out of the six correlations were significant. This was above chance expectation. The conclusion suggested is that the psychological hypothesis may be accepted with a fair degree of confidence.

## II. IMPLICATIONS FOR FURTHER RESEARCH.

1. One limitation inherent in this research, namely the relative paucity of obtained responses to each situation, suggests an investigation remedying this in order to determine the degree of specificity or generality of the mode of choosing words.

2. The results of the present study indicate that relatively enduring tension systems are expressed verbally not in a haphazard but in a relatively systematic manner, i.e. in quantitative differences in the use of grammatical categories. The psychological field is made up of many other tension systems (including other aspects of personality). It is possible that each of them could have a certain mode of communication. Further investigation to test this hypothesis is warranted.

3. The present research dealt with goal-oriented responses to obstacles. Newcomb<sup>1</sup> says that an obstacle is perceived in the frame of reference of the goal. This suggests that it is both the obstacle (or barrier) and the goal which might be emphasized most by the person with a high attitude of dominance. Newcomb also speaks of the threat-oriented response<sup>2</sup> to obstacles where the individual interprets the obstacle as a personal threat of some kind. The person perceives the obstacle in the frame of reference of his own safety or security. This suggests that, if such a tension system were present, it would be expressed in language through the use of more self related words. Studies to test these ideas are in order.

4. If a series of tension systems were investigated and their grammatical correlates established, it would enhance the clinical value of language as data. This would be desirable because samples of language are so readily available. However, in order to reach such a stage, it would be necessary to establish some norms on the use of the various grammatical categories. There are, for example, no norms on the grammatical categories investigated in the

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1 Theodore M. Newcomb, Social Psychology (New York: Dryden Press, 1950), p. 351.

2 Ibid., p. 352.

present research. Therefore, it is impossible to say how often a person with a high attitude of dominance will use the barrier as the subject of intransitive verbs. Further investigations could seek to find such norms.

5. The subjects chosen for this experiment were from the Boston University, College of Liberal Arts. Thus, the conclusions are limited to the above population. Further research could check the conclusions reached here by employing other populations.

6. This study dealt only with the levels of dominance as reported in a projective setting. It does not mean, therefore that the same results would be obtained from an actual situation where person A is speaking to person B. An investigation into this is indicated.

**APPENDIX A**  
**SITUATIONAL RESPONSES**

## SUBJECT ONE (HIGH LEVEL OF DOMINANCE)

Situation one. Well, I'm sorry; I think I see some seats down front. Would you mind if I go down there and see if there are some? And the result would be that he would let me.

Situation two. Isabelle, I realize that; but, as I can afford only sixty-five cents, I would still want to employ you because I think that you would find your work here not very heavy and you would like it here also; and I think the attitude at the house here would supplement the pay. (So, will Isabelle come?) Yes, I think so.

Situation three. Well let's make it decorative enough and put in a little more work and make it so that the people who are coming to the dance will stop and look at the work and appreciate it putting that much effort to that end. And the result will be that . . . and we would achieve it.

Situation four. I'm sorry, but I was next. Mind waiting on me? And the result would be she would do what I asked her for.

Situation five. I'm sorry, but I'm not interested in what you might have for sale. Perhaps at a later time you might have something that will interest me. Will you

come see me then? Result will be, I hope, she would leave.

Situation six. Judy, I hear you're spreading a rumor about me. I don't think that you would do such a thing, if you are a friend of mine. And I wish that you would tell me what the story is behind it. Is there any truth to such a thing? She would tell me yes or no.

Situation seven. I see you don't have them ready for me. And I really expected them. If I had known that you wouldn't have them ready, I would have taken them to some other cobbler. I would ask when they would be ready, and I would come in and get them then.

Situation eight. Well, I believe I have made an appointment; and, if you will please check the record book, I think you will find the appointment. And would you do that for me, please? The result would be that she would check it. She would let me in to see Dr. Irving.

Situation nine. Well, At this time I would rather have the hairdo that I planned on; and perhaps some other date I'd have more time to see how I like it. And the result would be that I would get the same one that I had.

Situation ten. Well, if I have a very good excuse for being late, I would offer that excuse. And if she accepts it, that will be the result of that. I wouldn't have to forfeit two weeks.

## SUBJECT TWO (HIGH LEVEL OF DOMINANCE)

Situation one. Well, I'd ask him if those seats were reserved; and, if he says no, I'd ask him why I couldn't sit there. He didn't realize that there were seats. Maybe he didn't see them; so he would let me go down, if I point them out to him.

Situation two. I'd try to reason with her; maybe give her a few extra privileges, perhaps something like having a lunch say at noon or be having a little extra time off. She will feel that she'd be satisfied with the work. She finds that, even though she is not getting seventy-five cents an hour, she would have a good job.

Situation three. Say to Jack that he was too lazy to . . . Think that if we were going to have a dance, we should make it look as nice as possible so that people would enjoy the surroundings. And if he didn't want to do it, the dirty work, I'd get somebody that could help; that if he doesn't feel he wants to do it, he doesn't have to. I think that he would probably pitch in and do some of the work.

Situation four. I'm sorry. I think that I was here before this lady or gentleman. I haven't too much time, and I've been waiting for quite awhile. I think that it will take only a few minutes for me to buy what I

want, I wish that you would wait on me now. (You would be waited on?) Well, I think the person who usually comes after you would say so, because he feels that if he was there first he would like to be waited on.

Situation five. I'm sorry; I have all the things that I need. I don't want to buy anything more. I'm sorry if you have spent the time. I'd probably tell her before she started showing me the things; and she can't very well force me to buy anything, if I don't want it.

Situation six. Well, where she got her information to spread about me and that, if she isn't able to reasonably prove that it's true, that I wish, I would tell her that I would appreciate it very much if she would stop spreading this rumor. And where she could, she would correct it.

Situation seven. I would tell him that he had promised me he would have them a week ago, and wish that he would try to get them done in that day, and that I'll be back later that evening.

Situation eight. Well, I'll tell her that I had made one and that there must have been some slip-up. And I wish she would check and see if she could find out any more about it. Well, she probably will find out that Mr. Irving had made an appointment and that she had overlooked it; and I'd finally get in to see him.

Situation nine. Well, I'd tell her that I was satisfied with the way my hair looked, and that I'd received many comments on it, and that I didn't want to cut my hair or change it so it wouldn't look as well as it did before.

Situation ten. I will explain to her why I was late. If I missed the train or if I had an appointment with one of the teachers here. I'd tell her that I was sorry and ask her if it would be all right for me to retain my privileges. They are very fair about it. If you can't possibly get in by nine o'clock, they usually let you go the first time.

**SUBJECT THREE (HIGH LEVEL OF DOMINANCE)**

Situation one. Anyone taking that seat down there? It'll be all right if I go down and take it, if there isn't anyone?

Situation two. Isabelle, I think I'd like to have you come work with us. I think that you'd be happy with us, but I can only pay you sixty-five cents. But I think that you'd be happy there, and it would be worth it to you. Isabelle says, that well, she's sorry; but she's really looking for something she likes. She has to get seventy-five cents an hour. And maybe if I talked to her, told her that we had a very nice family and that she'd enjoy working for us, she might take it anyway.

Situation three. Well Jack, everyone thinks so much about this dance. Everyone's been planning for it. They'll be disappointed if they don't come and we'd really done our best. Why don't we ask someone else's opinion and see if they don't agree that we should go to town and do it up right. So I don't know whether Jack would agree with me or not, but with a little persuasion he might.

Situation four. I'm sorry; I've been waiting. Would you mind taking this, please? (And she'll take it?) Yes.

Situation five. I'm very sorry. It's nice of you to take pains to show me this, but I really am not interested in buying any cosmetics. Perhaps some other time if you came, I would be.

Situation six. Hello, Judy. And I'd talk to her about something casual first, and then I'd say is it true . . . about me? And so, why maybe you misunderstood something I did. I'd like to explain myself better to you. And then, if she admits it, well, then I think we'd get along all right. If she . . . , I'd say, well, my other friends told me; perhaps they were wrong.

Situation seven. Well, could you possibly do them right now, just as soon as possible, because you did tell me they'd be ready today and I planned on

wearing them this evening. I'd appreciate it if you'd finish them now.

Situation eight. Oh I'm sorry . . . appointment for this time; but, if I didn't, then I'll make another one.

Situation nine. Well, if I really am intent on having my hair done that way, I'll say, well, maybe I'll try it some other time, but I'd like to have it this way now.

Situation ten. I'm sorry; it was unavoidable; and I know that it's right that my privileges be suspended for the next two weeks, but I really would appreciate it if it could be overlooked this time because I've made so many nice plans and I really couldn't help getting in late.

#### SUBJECT FOUR (INTERMEDIATE LEVEL OF DOMINANCE)

Situation one. That's happened to me quite a few times. I think I'd ask the usher. I'd say, could you please tell me if those seats are taken? Are they left there for someone special, because seats aren't supposed to be reserved. If he says that someone is waiting for the seats, then I'd go wherever there were some.

Situation two. I think I'd tell Isabelle that her qualifications were just what I wanted; but, due to circumstances, I couldn't pay more than sixty-five cents an hour, and if she would consider working for that price. And then if my circumstances got better, I would pay her seventy-five cents an hour, and probably even more if I could. Then, if she thought enough of working for me, then she would probably come.

Situation three. I think I'd ask Jack what the purpose was of being co-chairman, unless if it weren't to make the hall look as pretty as it could for the dance, because otherwise it wouldn't be too much of a success . . . talk to me things like that before; and, if the person doesn't care too much about it, the dance doesn't usually turn out too well. I'd tell him that we have to make a success of the dance to make the money; and it would be worthwhile putting in the extra time for the more elaborate decorations. And if he had any hope of having the dance be a success, he would help with the elaborate decorations.

Situation four. I'm a salesgirl, so I sort of realize that probably the girl didn't know that you were there first before the other one, because it often happens. And I'd ask her if she would please, wait on me because I'm in a hurry to catch a bus. It's happened to me, and I know sometimes it seems like a blur; so you wait on the

first person that's near you. If the person's in a hurry and he needs to be waited on, you wait on him right away and ask the person to wait.

Situation five. I think probably . . . I wouldn't be interested today, but some other time I may be, and if I am interested, I'll take her name and address so that, if I am interested, I can let her know about . . . because right now I have all the cosmetics that I need. Probably some day I will need some, and I'll be able to . . . because I like the cosmetics that she has.

Situation six. I'd be rather cold with her. I guess that's my nature, and I'd be very cold with her. And I don't usually ask right out about the . . . but I'll sort of hedge around it a little bit and get talking about it. Then I'll say that I did . . . talking about people that do stuff, do talk about other people; and I'll say I don't like them, that I just don't have anything to do with them anymore. And she'll realize that I know. She will either have to retract her statements or else, I mean, I just won't be bothered with her.

Situation seven. I would ask him if he would please have them done for the evening. They were the only type of shoe that would be suitable and that I had brought them in a week early so that I could have them for the evening. And I'd ask him if he could please have them

for the evening. And I'd ask him if he could please have them ready by this evening.

Situation eight. Well, I would ask the appointment if she ask the . . . if she would please check back on her records, because I had been there before and made the appointment so that I could see him today. And I made a special point of keeping track of it in the notebook, so that I wouldn't make the mistake of coming when I didn't have the appointment. Would she please check back? If she is any kind of a receptionist at all, she will remember that someone did make the appointment; and if she keeps record, she should find it. And if she doesn't, well, guess there wouldn't be too much I could do about it. She would have made an appointment for someone else, and I'd have to wait my turn.

Situation nine. I'd tell her to go ahead and do it because I'd like to change my hair styles quite abit. And if there's something to be more flattering and more becoming, I would like to try it out and see how it comes.

Situation ten. I had been wrong in doing it when I had known the regulation was nine o'clock. But, if it were for some educational purpose, I'd tell her that I had been doing it because I had probably had to go to the library, or something, and look up something and got delayed on the subway, and she would accept that.

## SUBJECT FIVE (INTERMEDIATE LEVEL OF DOMINANCE)

Situation one. If he said they are taken, well, I just wait in turn. If he said they're supposed to be taken but the people hadn't arrived, well, I'd ask why they would have to stay empty. (So you would take the seats?) Yes.

Situation two. Well, I think I'll look around a little more; and if I can't find anyone else, I'll let you know. Then probably end up by letting her know I would let her do the work the way she would.

Situation three. Well, I think that you should start right in to help; and two shouldn't take too long. We could get down and start right in to work and have it look elaborate. Then, whoever the people were who were coming to see it would really appreciate it. If it was done as quickly as possible, it would probably look that way. People wouldn't think it was worth coming for. Just getting the people to think that the committee that was in charge didn't care much about it. (How will it be done?) Doing it elaborately.

Situation four. Well, I was here first. Among your customers you should see who comes in first. I should think that she probably keep right on with the one she's waiting on. I would go to another store.

Situation five. Well, I don't see anything right now that I'm interested in; but, when I need any, I'll let you know. And she'd probably just try to sell me something. If she saw that I really didn't want anything, she would probably go along her way.

Situation six. Well, I don't think I'd say anything. I'd wait and see how she acted first. Then, if I found she had said something wrong, she might, if she mentioned it, why, I'd certainly ask her what had given her that idea. Otherwise, I think I'd just wait and see what she said first.

Situation seven. Oh, is it possible to have them fixed while I wait? If he said no, well, I have a little more shopping to do; and then I'll come back in about an hour and see if they're ready then. He probably would have them ready.

Situation eight. Whoever was here should have taken the message. There isn't any record of it? There must be some mistake. Isn't there a chance of my seeing him sometime today? Probably would be a few minutes sometime when she could fit me in.

Situation nine. Just as soon have it the way it is now, same style, because I like it this way. I'm used to this way, and it's been trained to go a certain way. She might go on trying to convince me I should have

it some other way. (What will the outcome be?) She convinced me once, but never again.

Situation ten. I guess I'll just have to forfeit them the next two weeks. Let's see; one week is better than two. Probably end up by staying in the next two weeks.

SUBJECT SIX (INTERMEDIATE LEVEL OF DOMINANCE)

Situation one. Tell the usher that I see the seats. I mean, that's usually the . . . then I go sit down.

Situation two. Why, I'd tell her the most I could pay is sixty-five cents; and I think that she's just the one I'm looking for; and I think she'd like the work. I'd tell her I think she'd like the work, I mean, if that's what she's looking for, and try to convince her. (What will happen?) Well, she might accept. She would.

Situation three. Why, I'd say that maybe the dance would be a better success if we did it the other way, and that it wouldn't be too much work. It might be fun, and, well, I think it'd be better the other way. He may not think so, but . . . may not agree. Might have an argument. (What will happen?) It all depends on him. Couldn't we compromise?

Situation four. I think I was next. (What will she do?) It depends on her. She'll go right on waiting on the other customer.

Situation five. I'm sorry, everything's very nice, but I have no use for it. I don't need it. I just don't want to buy any.

Situation six. Well, I'd ask her why she's doing it. Tell her it's not true and she knows it; and I don't know what she has against me, but it's not true what she's saying. I don't want people thinking something was wrong.

Situation seven. He's probably busy, very busy. Maybe he didn't have time. I would be disappointed though . . . because he's the cobbler. (Will you just leave them?) I have to.

Situation eight. Say on such and such a day she made an appointment for me. I know she did. I can remember probably. I'd say I wouldn't come here for nothing. I don't know what I'd do, though. Maybe, she'll fix it up so he can get me in.

Situation nine. I'll try it.

Situation ten. Tell her why I was late. Try to make an excuse; and I don't know; maybe if the next two weeks were important, I wouldn't do that, stay out late, if I'm not supposed to, unless it was something entirely out of my control. Two weeks is a long time. Probably have

to stay in for the next two weeks.

SUBJECT SEVEN (LOW LEVEL OF DOMINANCE)

Situation one. I think I'd ask to see the seats. You see, I work in a theatre. The picture would be almost over; he'd be asking to stay behind, wait until the next crowd comes out. So I'd probably, if I realize that, I would wait to enjoy the second.

Situation two. Well, if I really explained and she couldn't do it for less than seventy-five cents, I think I'd simply state to her the fact that I can only give her . . . all I could pay at the most. Or, if I thought that she were an exceptionally capable woman, I think I probably would. I'd try to meet her demands rather than remain at sixty-five cents. Unless, if she was exceptionally capable woman . . . I realize I couldn't find anything else.

Situation three. I want to have the room ornate. I probably would want it for the reason that I wanted to get an atmosphere for the dance that we were putting on. If it were, say, a Valentine's dance, that'd be elaborate. I mean in the sense that it would portray the date it was being held on. Suppose if I was argumentative, I probably would annoy you very much; and I think I would just state

my reasons for it. I wouldn't want to argue about it. Suppose I was determined, I think probably I would get my way; but if I weren't, I don't think I ever make an argument. (What will the outcome be?) More than likely, he would get his way.

Situation four. If I was rushed, I'd walk out and say nothing.

Situation five. I'd just tell her that, that I couldn't buy anything.

Situation six. I think I would question her openly about it when I met her and ask her if she knew anything about it. And I think . . . be a little more persistent and tell her that I heard things directly, that she was spreading it. And if she denied it again, of course I would drop it there. I wouldn't want to push it any further.

Situation seven. I would explain the situation to him, that I planned to wear them that night. I'd come and get them in an hour.

Situation eight. I made an appointment. (What will happen?) She'll say I didn't so I'll have to make another one.

Situation nine. I think I'd be hesitant about doing it. Yes, I would try it. I would let her go ahead with it, providing it wasn't too radical.

Situation ten. If I was human, I probably try to rationalize. (What will the outcome be?) Well, I have no doubt, I think if she were a housemother, she must be pretty shrewd as far as girls go.

SUBJECT EIGHT (LOW LEVEL OF DOMINANCE)

Situation one. At first I'd tell him that I'd seen the seats and ask him if they could, if we could sit in them or if they were reserved . . . (What will the outcome be?) Well, if he has a reason, well, then I'd go back to seats that were empty.

Situation two. I'd explain that I'm paying only sixty-five and try to come to some terms with her. And if not, then I'd have to let her go if I couldn't come to any terms.

Situation three. I'd explain how we could make it more beautiful with perhaps not very much work anyhow. And . . . more pleasant for everyone to do our best in making it elaborate. (What will happen?) Well, that's happened to me. Usually they agree.

Situation four. Nothing. I'd wait until she was through.

Situation five. I'd tell her that I don't usually use them anyhow or that I am never in a position to buy

anything much anyhow, unless I need it; and if I needed it, I wouldn't wait for a salesman to come.

Situation six. Well, if it's something that she is known for doing to other people too, I'd probably, and if I was sure that she had said it, I'd probably mention it to her and ask her why she had said that. Ask her; if I liked her very much, I might not mention it at all. I don't know what I'd do really.

Situation seven. I ask him if he could have them ready for that night. And, anyhow, I mean that has happened to me; and usually they try to do it right then and there. And if not, there isn't anything I could say to him, except to let it go and come back some other day. (What will happen?) I'll go back some other day.

Situation eight. Well, I'd explain that I had made the appointment. Then, if she believed me, then I'd see him then, if he weren't busy. If not, I'd come back later after making an appointment at that time. (What will happen?) Oh, I'll make another appointment.

Situation nine. If I could afford it, I'd let her try it.

Situation ten. I'd agree with her and tell her why, if I had a good reason. I'd tell her why anyhow and settle with her there, as it would be in all cases whenever one is late on a week night, and I'd stay in the next two weeks.

## SUBJECT NINE (LOW LEVEL OF DOMINANCE)

Situation one. Aren't there some seats down there? And if he answers they are reserved, I'll say, well, I'm sorry; in that case, I'll go upstairs. Thank you, I'll go upstairs.

Situation two. Isabelle, I wish that you would reconsider; and I'll make your stay in my home very pleasant, because you seem to be just the sort of person that I would like to have work for me. You have been told about . . . raise your pay to seventy-five an hour. (Do you think she'll take it?) I hope she'd take it.

Situation three. Oh, Jack, I'd rather do it the best . . . I'll do most of it. I just want your cooperation. And then Jack will say okay and be convinced, and we'll do it together my way.

Situation four. I wouldn't say anything in that case. I'd just leave.

Situation five. I don't seem to . . . in fact, I use a complete brand of my own; but I'll try this lipstick; and I'll buy a tube of lipstick, I think, something small.

Situation six. I'll act as I ordinarily would. I'd just say hello and how are you; and in both our presence I'd tell her what I thought of it. I mean, I'd ask her why she mentioned, you know, that thing; and I'd explain it, if she

were wrong; but if she were right, I'd just take it.

Situation seven. If you could get them done, I'd be very glad; but if you can't, I'll have to do without; and I'll come in tomorrow or the next day and get them. And I'd leave, and come back the next day.

Situation eight. I've already called and made an appointment for such and such a time; and, if he isn't able to see me today, would you put me down for a time that he could see me? And I'd have her made the appointment.

Situation nine. I'd tell her to go ahead and try it, on the risk if I didn't like it she'd have to do it over again.

Situation ten. I realize I should have been in at nine, but well, I'd give her the excuse, the right excuse; and, if she thought it were legitimate and that I couldn't have been in at nine, she'd let me go out the next two weeks. I'd thank her very much. But, if she said that I knew I had to be in at nine and I wouldn't be able to go out the next two weeks, I'll just grin and bear it. (What will happen?) I wouldn't be able to go out the next two weeks.

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**APPENDIX B**  
**QUALITATIVE ANALYSIS**  
**OF RESPONSES**

## SUBJECT 1

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	6
2	6
3	6
4	6
5	6
6	6
7	2
8	6
9	6
10	6
COMPOSITE LEVEL OF DOMINANCE	56

## SUBJECT 2

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	6
2	6
3	6
4	6
5	6
6	6
7	4
8	6
9	6
10	6
COMPOSITE LEVEL OF DOMINANCE	58

## SUBJECT 3

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	6
2	6
3	6
4	6
5	6
6	6
7	6
8	1
9	6
10	6
COMPOSITE LEVEL OF DOMINANCE	55

## SUBJECT 4

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	2
2	6
3	6
4	6
5	6
6	5
7	4
8	2
9	1
10	6
COMPOSITE LEVEL OF DOMINANCE	44

## SUBJECT 5

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	6
2	6
3	6
4	5
5	6
6	5
7	4
8	4
9	6
10	1
COMPOSITE LEVEL OF DOMINANCE	49

## SUBJECT 6

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	6
2	6
3	4
4	1
5	6
6	6
7	2
8	6
9	1
10	2
COMPOSITE LEVEL OF DOMINANCE	40

## SUBJECT 7

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	1
2	2
3	2
4	5
5	6
6	6
7	4
8	1
9	1
10	2
<b>COMPOSITE LEVEL OF DOMINANCE</b>	<b>30</b>

## SUBJECT 8

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	2
2	5
3	6
4	1
5	6
6	4
7	2
8	2
9	1
10	1
COMPOSITE LEVEL OF DOMINANCE	30

## SUBJECT 9

SITUATION	LEVEL OF DOMINANT BEHAVIOR
1	2
2	6
3	6
4	5
5	1
6	6
7	1
8	1
9	1
10	2
COMPOSITE LEVEL OF DOMINANCE	31

**APPENDIX C**  
**QUANTITATIVE ANALYSIS**  
**OF RESPONSES**

## SUBJECT 1

GRAMMATICAL CATEGORY		SITUATION										TOTAL	
		1	2	3	4	5	6	7	8	9	10		
TRANSCRIPTIVE	SUBJECT	BARRIER (1)	2	2	4	2	3	4	2	5	0	1	25
		NON-BAR.(2)	4	6	6	1	2	3	6	3	6	3	40
	DIR.	BARRIER (3)	0	1	0	0	0	0	0	0	0	0	1
	OBJ.	NON-BAR.(4)	2	5	5	1	3	4	5	6	6	3	40
	IND.	BARRIER (5)	0	0	0	1	0	0	0	0	0	0	1
	OBJ.	NON-BAR.(6)	0	0	0	0	0	2	0	1	0	0	3
INTERPRETATIONS.	SUBJECT	BARRIER (7)	0	0	0	0	1	1	0	0	0	0	2
		NON-BAR.(8)	4	1	3	3	3	2	1	1	1	1	15
PASSIVE	SUBJECT	BARRIER (9)	0	0	0	0	0	0	0	0	0	0	0
		NON-BAR.(10)	0	0	0	0	0	0	1	0	0	0	1
ADJECTIVE	SUBJECT	BARRIER (11)	0	0	0	0	0	1	0	0	0	0	1
		NON-BAR.(12)	4	0	2	3	2	3	0	1	1	1	17
NUMBER OF WORDS (13)			40	56	55	24	41	57	52	50	45	36	456

## SUBJECT 2

GRAMMATICAL CATEGORY		SITUATION										TOTAL	
		1	2	3	4	5	6	7	8	9	10		
T R A N S I T I V E	SUB- JECT	BARRIER (1)	4	4	7	0	3	3	3	4	0	1	30
		NON-BAR.(2)	3	2	7	10	5	4	2	4	4	6	47
S E R I E S	DIR. OBJ.	BARRIER (3)	0	0	0	0	0	0	0	0	0	0	0
		NON-BAR.(4)	4	4	7	4	7	4	2	4	3	2	41
I N T R A N S. P A S S I V E	IND. OBJ.	BARRIER (5)	2	1	1	0	1	1	1	1	1	3	12
		NON-BAR.(6)	0	0	0	0	2	0	1	0	0	0	3
I N T R A N S. P A S S I V E	SUB JECT	BARRIER (7)	0	0	2	1	0	1	0	1	0	1	6
		NON-BAR.(8)	2	1	1	5	2	1	1	1	3	3	20
P A S S I V E	SUB JECT	BARRIER (9)	0	1	0	0	0	0	0	0	0	0	1
		NON-BAR.(10)	1	0	0	0	0	0	1	0	0	0	2
A D J E C T.	SUB JECT	BARRIER (11)	0	0	1	0	0	0	0	0	0	1	2
		NON-BAR.(12)	2	1	1	2	2	1	0	2	1	2	14
NUMBER OF WORDS (13)			53	61	84	83	57	53	38	63	48	73	613

## SUBJECT 3

GRAMMATICAL CATEGORY		SITUATION										TOTAL	
		1	2	3	4	5	6	7	8	9	10		
TRAN- SITIVE	SUB- JECT	BARRIER (1)	0	5	3	2	2	1	3	0	0	1	17
		NON-BAR.(2)	2	8	6	0	1	6	2	1	5	5	36
TRANSITIVE	DIR. OBJ.	BARRIER (3)	0	0	0	0	0	1	0	0	0	0	1
		NON-BAR.(4)	2	5	3	1	3	3	4	2	1	3	27
INDIV- IDUAL	IND. OBJ.	BARRIER (5)	0	3	0	0	0	2	0	0	1	0	6
		NON-BAR.(6)	0	0	0	0	1	1	1	0	0	0	3
INSTRUMENTAL	SUB- JECT	BARRIER (7)	0	4	3	1	1	1	0	0	0	0	10
		NON-BAR.(8)	2	1	4	1	0	3	1	1	0	1	14
PASSIVE	SUB- JECT	BARRIER (9)	0	0	0	0	0	0	0	0	0	0	0
		NON-BAR.(10)	0	0	1	0	0	0	0	0	1	2	4
ADJECTIVE	SUB- JECT	BARRIER (11)	0	0	0	0	0	0	0	0	0	0	0
		NON-BAR.(12)	1	1	5	6	1	0	2	1	1	3	21
NUMBER OF WORDS (13)		23	100	78	14	36	71	41	19	35	53	470	

## SUBJECT 4

GRAMMATICAL CATEGORY		SITUATION										TOTAL
		1	2	3	4	5	6	7	8	9	10	
TRANSDISITIVE	SUBJECT BARRIER (1)	2	2	4	5	1	2	2	7	0	1	26
	NON-BAR.(2)	3	5	6	4	7	10	4	10	4	4	57
	DIR. BARRIER (3)	1	0	0	0	1	2	0	1	0	0	5
	NON-BAR.(4)	0	5	6	3	5	7	3	12	4	3	48
	IND. BARRIER (5)	0	2	2	1	0	0	2	0	1	1	9
	NON-BAR.(6)	2	0	1	0	0	0	0	0	0	0	3
INTRANSITIVE	SUBJECT BARRIER (7)	0	1	1	0	1	0	0	1	0	0	4
	NON-BAR.(8)	4	3	8	7	4	5	2	2	3	5	43
PASSIVE	SUBJECT BARRIER (9)	0	0	0	0	0	0	0	0	0	0	0
	NON-BAR.(10)	3	0	0	0	0	0	1	0	0	0	4
ADJECTIVE	SUBJECT BARRIER (11)	0	0	0	0	0	0	0	0	0	0	0
	NON-BAR.(12)	1	1	5	6	1	0	2	1	1	3	21
NUMBER OF WORDS (13)		62	73	132	102	72	113	49	135	45	61	844

## SUBJECT 5

GRAMMATICAL CATEGORY		SITUATION										TOTAL
		1	2	3	4	5	6	7	8	9	10	
TRANSCRIPTIVE	SUBJECT BARRIER (1)	2	1	1	2	2	3	2	1	2	0	16
	NON-BAR.(2)	2	5	4	1	5	8	2	4	1	2	34
	DIR. BARRIER (3)	0	3	1	0	1	0	0	1	0	0	6
	OBJ. NON-BAR.(4)	1	2	6	1	6	5	3	2	6	1	33
	IND. BARRIER (5)	0	0	0	0	0	2	0	0	0	0	2
	OBJ. NON-BAR.(6)	0	0	0	0	1	0	0	0	0	0	1
INTERPRETABLE	SUBJECT BARRIER (7)	0	0	4	1	1	1	0	0	1	0	8
	NON-BAR.(8)	2	1	10	3	0	2	4	4	1	3	30
PASSIVE	SUBJECT BARRIER (9)	0	0	0	0	0	0	0	0	0	0	0
	NON-BAR.(10)	2	0	0	0	0	0	1	0	1	0	4
ADJECTIVE	SUBJECT BARRIER (11)	0	0	0	0	0	0	0	0	0	0	0
	NON-BAR.(12)	0	0	4	0	0	0	2	4	0	1	11
NUMBER OF WORDS (13)		39	42	94	37	50	58	38	43	56	37	494

## SUBJECT 6

GRAMMATICAL CATEGORY		SITUATION										TOTAL	
		1	2	3	4	5	6	7	8	9	10		
T R A N S I T I V E	SUB- JECT	BARRIER (1)	0	3	2	0	0	2	1	2	0	0	10
		NON-BAR.(2)	2	7	4	1	3	7	0	6	1	4	35
	DIR. OBJ.	BARRIER (3)	0	1	0	0	0	0	0	0	0	0	1
		NON-BAR.(4)	1	4	2	0	3	6	1	5	1	2	25
	IND. OBJ.	BARRIER (5)	1	2	0	0	0	2	0	0	0	1	6
		NON-BAR.(6)	0	0	0	0	0	0	0	0	0	0	0
I N T R A N S. S.	S U B J E C T	BARRIER (7)	0	3	3	1	0	0	2	1	0	0	10
		NON-BAR.(8)	3	4	6	2	2	3	1	2	0	6	29
P A S S I V E	S U B J E C T	BARRIER (9)	0	0	0	0	0	0	0	0	0	0	0
		NON-BAR.(10)	0	0	0	0	0	0	1	0	0	0	1
A D J E C T.	S U B J E C T	BARRIER (11)	0	1	0	0	0	0	2	0	0	0	3
		NON-BAR.(12)	0	2	5	1	2	3	0	0	0	4	17
NUMBER OF WORDS (13)		19	67	67	19	27	48	25	52	4	63	391	

## SUBJECT 7

GRAMMATICAL CATEGORY		SITUATION										TOTAL	
		1	2	3	4	5	6	7	8	9	10		
TRANSITIVE	SUBJECT	BARRIER (1)	1	1	1	0	0	3	0	1	1	0	8
		NON-BAR.(2)	3	9	14	1	2	7	3	2	2	3	46
	DIR. OBJ.	BARRIER (3)	0	0	1	0	0	2	0	0	1	0	4
		NON-BAR.(4)	4	4	10	1	2	6	3	2	1	2	35
	IND. OBJ.	BARRIER (5)	0	2	0	0	1	2	1	0	0	1	7
		NON-BAR.(6)	0	0	0	0	0	0	0	0	0	0	0
INTRANSITIVE	SUBJECT	BARRIER (7)	7	2	0	0	0	0	0	0	2	11	
		NON-BAR.(8)	5	3	6	1	0	0	1	1	2	1	20
PASSIVE	SUBJECT	BARRIER (9)	0	0	0	0	0	0	0	0	0	0	
		NON-BAR.(10)	0	0	0	1	0	0	0	0	0	0	1
ADJECTIVE	SUBJECT	BARRIER (11)	2	0	0	0	0	0	0	0	2	4	
		NON-BAR.(12)	3	0	4	0	0	4	0	0	2	1	14
NUMBER OF WORDS (13)		51	83	22	11	12	65	24	18	28	31	345	

## SUBJECT 8

GRAMMATICAL CATEGORY		SITUATION										TOTAL	
		1	2	3	4	5	6	7	8	9	10		
TRAN- SITIVE	SUB- JECT	BARRIER (1)	1	0	1	0	0	2	3	1	1	0	9
		NON-BAR.(2)	3	5	3	5	5	6	4	4	2	3	40
DIR. OBJ.		BARRIER (3)	0	0	0	1	1	1	0	1	0	0	4
		NON-BAR.(4)	3	1	1	5	4	4	3	4	2	1	28
IND. OBJ.		BARRIER (5)	2	0	0	1	1	3	2	0	0	2	11
		NON-BAR.(6)	0	0	1	0	0	0	1	0	0	0	2
IN- TRANS- ITIVE		BARRIER (7)	0	1	1	0	0	0	0	0	0	0	2
		NON-BAR.(8)	3	2	2	2	1	1	3	1	0	2	17
PASSIVE		BARRIER (9)	0	0	0	0	0	1	0	0	0	0	1
		NON-BAR.(10)	1	0	0	0	0	0	0	0	0	0	1
ADJECTIVE		BARRIER (11)	0	0	0	0	0	0	0	1	0	0	1
		NON-BAR.(12)	0	0	1	1	1	2	1	0	0	0	6
NUMBER OF WORDS (13)		46	33	40	8	43	67	62	46	11	50	406	

## SUBJECT 9

GRAMMATICAL CATEGORY		SITUATION										TOTAL	
		1	2	3	4	5	6	7	8	9	10		
TRANSITIVE	SUBJECT	BARRIER (1)	1	1	2	0	0	1	1	2	1	3	12
		NON-BAR.(2)	2	5	4	1	3	6	2	4	2	5	34
	DIR. OBJ.	BARRIER (3)	1	0	0	0	0	0	0	1	0	1	3
		NON-BAR.(4)	0	4	5	1	4	5	3	4	4	3	33
	IND. OBJ.	BARRIER (5)	0	0	0	0	0	0	0	0	5	1	6
		NON-BAR.(6)	0	0	0	0	0	0	0	0	0	0	0
INTRANSITIVE	SUBJECT	BARRIER (7)	0	2	0	0	0	7	1	0	0	0	10
	NON-BAR.(8)	4	0	0	1	1	4	4	1	0	7	22	
PASSIVE	SUBJECT	BARRIER (9)	0	1	1	0	0	0	0	0	0	0	2
	NON-BAR.(10)	1	0	0	0	0	0	1	0	0	0	2	
ADJECTIVE	SUBJECT	BARRIER (11)	0	1	0	0	0	2	0	0	0	0	3
	NON-BAR (12)	1	0	0	0	0	0	1	0	0	2	4	
NUMBER OF WORDS (13)		34	55	37	12	33	62	45	45	27	100	450	

**APPENDIX D**

**QUALITATIVE ANALYSIS  
OF RESPONSES BY  
FOUR INDEPENDENT JUDGERS**

## JUDGER 1

SUBJECT	SITUATION									
	1	2	3	4	5	6	7	8	9	10
1	2	3	2	3	3	3	2	3	3	2
2	2	3	2	3	3	3	2	3	3	3
3	2	3	2	3	3	3	3	1	2	2
4	3	3	2	2	3	2	2	2	1	2
5	3	2	3	1	2	1	3	2	3	1
6	3	3	2	1	3	3	1	2	1	1
7	1	2	2	1	2	3	2	2	1	2
8	2	2	3	1	3	2	2	2	1	1
9	2	3	3	1	1	2	1	2	1	2
10	1	3	2	3	3	2	2	2	1	3
11	3	2	2	1	1	2	3	2	2	2
12	3	3	2	2	1	3	3	1	1	1
13	3	2	2	3	3	3	3	3	1	2
14	2	2	2	1	3	3	2	2	2	2
15	2	2	2	1	2	2	2	1	3	2
16	2	2	2	1	3	1	1	2	1	1
17	3	2	2	2	3	1	3	2	2	1
18	3	2	2	1	3	1	2	2	3	2
19	3	2	2	3	3	3	2	3	1	1
20	3	1	1	3	3	1	2	1	2	1
21	2	3	1	1	2	2	3	2	3	2
22	3	3	3	1	3	3	2	3	1	3
23	3	2	2	3	3	2	1	1	2	2
24	1	3	3	2	3	3	2	2	2	2
25	2	2	1	1	3	1	2	1	3	2
26	3	2	2	1	3	3	2	2	1	1
27	2	3	2	2	3	3	2	1	2	2
28	1	2	2	1	3	3	2	2	2	2
29	2	2	3	1	3	1	3	2	2	1
30	2	2	3	1	3	1	1	2	1	1
31	3	2	3	2	3	1	2	2	2	1
32	2	3	2	2	3	3	3	2	2	2
33	2	2	3	2	3	2	2	2	1	1
34	1	2	2	1	3	3	3	2	2	2
35	3	2	3	1	3	1	2	1	1	1
36	2	2	2	2	1	3	2	2	1	2

JUDGER 2

SUBJECT	SITUATION									
	1	2	3	4	5	6	7	8	9	10
1	2	3	2	3	3	3	2	3	3	2
2	2	3	3	3	3	3	2	3	3	2
3	2	3	3	3	2	3	2	1	2	2
4	3	2	3	2	2	2	2	2	1	2
5	3	2	3	2	2	1	3	3	1	1
6	3	2	3	1	3	3	1	2	1	1
7	2	2	2	1	3	3	3	2	1	1
8	3	2	3	1	3	2	2	2	1	1
9	3	3	3	1	1	3	1	2	1	2
10	1	3	2	3	2	2	2	2	1	3
11	3	3	2	1	1	2	2	2	1	2
12	3	2	3	2	1	3	3	1	1	2
13	2	2	2	3	3	3	2	3	1	2
14	2	2	3	1	3	3	2	2	2	2
15	3	2	2	1	3	2	2	1	3	2
16	2	2	3	1	3	1	2	2	1	1
17	3	3	2	2	3	1	3	2	2	1
18	3	2	2	1	3	1	2	1	3	2
19	3	2	3	3	3	3	2	3	1	1
20	3	1	1	3	3	1	3	2	2	1
21	1	3	1	2	2	2	3	2	3	2
22	3	3	3	2	3	3	1	3	1	3
23	3	2	2	3	2	2	1	1	2	2
24	2	3	3	2	3	3	3	2	1	2
25	2	3	1	1	3	1	3	1	3	2
26	3	2	2	1	3	3	2	2	1	1
27	1	3	2	3	3	3	2	1	2	2
28	1	2	2	1	2	3	3	2	2	2
29	2	2	3	1	2	1	2	2	2	1
30	2	2	3	1	3	1	1	2	1	1
31	3	2	3	2	3	1	2	2	1	1
32	2	2	3	2	3	3	3	2	2	2
33	1	2	3	2	3	2	3	1	1	1
34	1	2	2	2	3	3	3	1	2	2
35	3	1	2	1	3	1	2	1	1	1
36	1	1	2	2	1	3	2	1	1	3

## JUDGER 3

SUBJECT	SITUATION									
	1	2	3	4	5	6	7	8	9	10
1	2	3	2	3	3	3	2	3	3	2
2	2	3	2	3	3	3	2	3	3	2
3	2	3	2	3	3	3	2	3	3	2
4	2	3	2	3	3	3	2	3	3	2
5	2	3	2	3	3	3	2	3	3	2
6	2	3	2	3	3	3	2	3	3	2
7	2	3	2	3	3	3	2	3	3	2
8	2	3	2	3	3	3	2	3	3	2
9	2	3	2	3	3	3	2	3	3	2
10	2	3	2	3	3	3	2	3	3	2
11	2	3	2	3	3	3	2	3	3	2
12	2	3	2	3	3	3	2	3	3	2
13	2	3	2	3	3	3	2	3	3	2
14	2	3	2	3	3	3	2	3	3	2
15	2	3	2	3	3	3	2	3	3	2
16	2	3	2	3	3	3	2	3	3	2
17	2	3	2	3	3	3	2	3	3	2
18	2	3	2	3	3	3	2	3	3	2
19	2	3	2	3	3	3	2	3	3	2
20	2	3	2	3	3	3	2	3	3	2
21	2	3	2	3	3	3	2	3	3	2
22	2	3	2	3	3	3	2	3	3	2
23	2	3	2	3	3	3	2	3	3	2
24	2	3	2	3	3	3	2	3	3	2
25	2	3	2	3	3	3	2	3	3	2
26	2	3	2	3	3	3	2	3	3	2
27	2	3	2	3	3	3	2	3	3	2
28	2	3	2	3	3	3	2	3	3	2
29	2	3	2	3	3	3	2	3	3	2
30	2	3	2	3	3	3	2	3	3	2
31	2	3	2	3	3	3	2	3	3	2
32	2	3	2	3	3	3	2	3	3	2
33	2	3	2	3	3	3	2	3	3	2
34	2	3	2	3	3	3	2	3	3	2
35	2	3	2	3	3	3	2	3	3	2
36	2	3	2	3	3	3	2	3	3	2

JUDGER 4

SUBJECT	SITUATION									
	1	2	3	4	5	6	7	8	9	10
1	2	3	3	3	3	3	1	3	3	2
2	3	3	3	3	3	3	2	3	3	3
3	3	3	2	3	3	3	3	2	3	3
4	2	2	2	3	2	2	3	2	1	2
5	2	2	3	2	3	1	3	2	3	1
6	3	3	2	1	3	3	1	2	1	1
7	2	3	3	1	3	3	3	2	1	1
8	2	2	3	1	3	2	2	2	1	1
9	2	3	3	1	1	3	2	2	1	2
10	2	3	2	3	3	2	2	2	1	3
11	2	2	2	1	1	3	2	2	2	2
12	2	3	3	2	1	3	3	1	1	1
13	3	2	2	3	3	3	3	2	2	3
14	2	2	3	2	3	2	2	2	2	2
15	3	2	2	1	3	3	2	1	3	2
16	3	2	3	1	3	1	2	2	1	1
17	2	2	3	2	3	1	2	2	2	1
18	2	2	2	1	3	1	2	1	3	2
19	3	2	1	3	3	3	2	3	1	1
20	3	1	1	3	3	1	3	1	2	1
21	1	3	1	1	2	2	3	1	3	2
22	3	3	3	2	3	3	2	3	1	3
23	3	2	2	3	3	2	1	2	1	1
24	1	3	3	2	3	3	3	1	1	2
25	2	2	1	1	3	1	3	3	1	2
26	3	2	2	1	3	3	2	1	1	1
27	1	3	2	3	3	3	2	1	2	2
28	1	2	2	1	3	3	3	2	2	2
29	2	2	3	1	3	1	2	2	2	1
30	2	2	3	1	3	1	2	2	1	1
31	3	2	3	2	3	1	3	3	2	3
32	2	3	2	2	3	3	2	2	1	2
33	2	2	2	2	3	2	3	1	2	2
34	1	2	2	1	3	3	2	2	1	2
35	3	1	2	1	1	3	2	1	1	1
36	2	1	2	2	1	3	2	1	3	3

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**A QUANTITATIVE ANALYSIS OF GRAMMATICAL  
CATEGORIES AS A MEASURE OF DOMINANCE**

**Abstract of a Dissertation**

**Submitted in partial fulfilment of the  
requirements for the degree of  
Doctor of Philosophy**

**BOSTON UNIVERSITY GRADUATE SCHOOL**

**by**

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The problem of the present research was to examine quantitatively certain grammatical categories as measures of an attitude, namely, degree of dominance. This problem grew out of the general theory that there is a close relationship between language and personality. Relevant experiments are cited. Since the dissertation entailed the quantitative analysis of grammatical constructions, a more thorough survey of work dealing with the quantitative analysis of language is undertaken.

Various theorists' viewpoints on the place of dominance in their conceptual schema of personality are reviewed. The importance of dominance as a personality variable is here stressed. Experimental studies on dominance on the infrahuman and human levels are cited. From these and other theorists' viewpoints, the following definition of dominance is offered: an attitude which is inferred from certain types of behavior. For example, if person A, aiming toward goal A but prohibited by a barrier, person B, who is himself directed toward goal B, continues on his original pathway, manipulates person B in some way, and reaches his own goal A, then person A is exhibiting very dominant behavior; and it is inferred that he has a high level of dominance. On the other hand, if person A relinquishes his goal A and adopts goal B, he is exhibiting the least dominant behavior;

and it is inferred that he has a low level of dominance. The above two levels are defined as being on opposite ends of a hierarchy. From this general format four levels of dominant behavior were delineated.

In order to conduct the present research, it was necessary to formulate a working hypothesis concerning the relationship of dominance to language. The survey of previous experiments and related literature did not supply sufficient cues for this purpose. It was feasible, therefore, to carry out an exploratory study preliminary to the main research.

For the exploratory study, five female students, who were non-English majors and of non-bilingual background, were used as subjects. The stimuli, presented in serial order to each student separately consisted of eight situations projective in nature. All were so constructed that each contained a barrier (a person) blocking a stated goal of the subject. Ideas for the situations were sought for in the nature of the questions asked in the Ascendance-Submission Reaction Study by Gordon W. Allport and Floyd H. Allport. The response from each subject was recorded and later analyzed qualitatively and quantitatively. The qualitative analysis yielded scores representing the various levels of dominant behavior. In the quantitative analysis,

various functional grammatical categories were counted and converted into ratio scores. A composite level of dominance score, the sum of the quantitative scores for each situation, was computed for each subject. This was correlated with each of the various grammatical category scores mentioned above. Many of the correlations were high, though insignificant. The grammatical categories involved in the relatively high correlations were considered as aspects of language conceivably related to dominance. The following working hypotheses were arrived at: (1) an individual with a high score on the dominance hierarchy will use the barrier as the subject of intransitive verbs more often than a person with a lower score; (2) an individual with a high score on the dominance hierarchy will use the barrier as the subject of transitive verbs more often than a person with a lower score; (3) an individual with a high score on the dominance hierarchy will use the barrier less often as the subject of passive verbs than a person with a lower score; (4) an individual with a high score on the dominance hierarchy will use things other than the barrier more often as direct objects than a person with a lower score; (5) an individual with a high score on the dominance hierarchy will use things other than the barrier more often as indirect objects than a person with a lower score; and (6) an individual with

a high score on the dominance hierarchy will modify the subject, when it is the barrier, more often than a person with a lower score.

The main experiment was then undertaken to test the above hypotheses. Thirty-six students were used as subjects. The design and procedure were identical to those in the preliminary experiment. The responses of each subject were subjected, as before, to both qualitative and quantitative analyses. In addition, a discriminant analysis was made of the qualitative data. Scores thus obtained were correlated. Three of the correlations (those testing hypotheses one, three, and four) were significant at the one per cent level; one (that testing hypothesis five) was significant at the five per cent level; and two (those testing hypotheses two and six) were non-significant.

An attempt was made to "explain" the results obtained. Krech and Crutchfield's theoretical approach was utilized. An attitude is conceptualized as a relatively enduring state of tension which arises from the organization of the various systems in the psychological field. It is concerned with some specific object. This object is perceived as demanding some type of action on the part of the individual. This demand for action is the actual tension system that seeks reduction through behavior. Dominance, as an attitude, is

concerned with a specific object, namely, the barrier. The way in which the barrier is perceived is determined by the level of dominance. The perception of the barrier entails some kind of demand for action on the part of the individual. The demand for action is greater, the greater the degree of dominance.

The tension (demand for action) is customarily reduced by behavior, that is, manipulating the barrier. In speech, manipulation of the barrier occurs in the form of grammatical manipulation of words representing the barrier. Thus speech, as a special form of behavior, is also tension reducing.

In order to relate the above theoretical formulation to the specific hypotheses involved in the main experiment, the principle of emphasis in rhetoric was found useful as an explanatory concept. According to English grammar, the subject (because of primacy) and the verb (because it is the "heart" of the sentence) are the most vital tools for emphasis in the sentence. In order to gain emphasis, the object in the focus of an individual's attention, is placed by him in the more vital parts of the communicative system. Thus, it follows that the person with a high level of dominance is ordinarily expected to use the barrier as the subject of the verb of the sentence more often than the person with a lower degree of dominance. This should be the

case when the subject is with the intransitive and transitive verbs. Since the subject of the passive verb is, however, functionally the object of the verb and since objects are not a place of emphasis, the person with a high level of dominance is ordinarily expected to use the barrier as the subject of passive verbs less often than a person with a lower level of dominance. This same relationship would also exist for other objects, both direct and indirect. It is further theorized that emphasis on the subject as focus of attention can be increased by modifying it by means of adjectives. The person with a high level of dominance is, then, expected to use more adjectives to modify the subject when it is the barrier than the person with a lower level of dominance.

From the above theory, the following psychological hypothesis can be stated: the tools of communication are selected so as to express tensions produced by the cognitive organization associated with levels of dominance. The results from the statistical analyses entailed in the present research suggest that the psychological hypothesis may be accepted with a fair degree of confidence. This indicates that relative enduring tension systems are expressed verbally not in a haphazard but in a relatively systematic manner, i.e. in quantitative differences in the use of grammatical

categories. The psychological field is made up of many other tension systems (including other aspects of personality). It is possible that each of them could have a certain mode of communication. Further investigation to test this hypothesis is warranted.

## AUTOBIOGRAPHY OF CANDIDATE

The candidate was born in Ceres, California on November 30, 1924. Her parents were born in Japan and had emigrated to America in the early 1900's. They are both living. The father's name is Kusutaro Kimoto, and the mother's maiden name was Toku Kanazawa.

The candidate went to Grammar School and High School in Ceres. In 1942 she was moved to Amache, Colorado by the United States Government. She went to college at Dakota Wesleyan University in South Dakota and received the A.B. degree in June 1946. While there, she held an Assistantship in Biology. Graduate work was undertaken at Boston University. She received the A.M. degree in June 1948. Here, she held an Assistantship in Psychology and, later, a Teaching Fellowship.

