THE RELATIONSHIP BETWEEN SELECTED PERSONALITY FACTORS AND CANCER

By

DIANA L. B. RIVERA

A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1983

To Lisa

ACKNOWLEDGEMENTS

Grateful acknowledgement is given for the contributions of my supervisory committee: to Dr. Ted Landsman, for his careful and caring criticism of my work and for his leadership in this project; to Dr. Janet Larsen, for her valuable suggestions and for encouraging me with her belief in the value of this undertaking; to Dr. James Joiner, for his accessibility and support; to Dr. John Saxon, for his advice on research design and methodology; and to Dr. Roy Weiner, who made it easy, for the warmth with which he received a visitor to his field of knowledge.

Thanks go also to the University of Florida Medical Oncology faculty, to Joann McGhin for making space available, and to Loretta Robinson, who typed the manuscript.

Finally, with special gratitude, I thank those who participated as subjects.

TABLE OF CONTENTS

Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

THE RELATIONSHIP BETWEEN SELECTED PERSONALITY FACTORS AND CANCER

By

Diana L. B. Rivera

August, 1983

Chairman: Ted Landsman, Ph.D.
Major Department: Counselor Education

This study investigated a relationship between personality and cancer based on Bakan's concepts of Agency and Communion. Agency refers to that aspect of personality motivated by the need for individuation and separation; Communion refers to that aspect of personality motivated by the need for unity and belonging. Thirty cancer subjects were compared with a matched group of 30 cancer-free subjects on performance on selected scales of the Personality Research Form. Agency/Communion ratios were constructed for each subject by dividing total score on scales fitting the definition of agency by total score on scales fitting the definition of Communion. The cancer group was found to score significantly higher on Agency/Communion ratio than the non-cancer group. Significant differences between the

two groups were also found on three of the individual scales. These findings support Bakan's theory of an association between Agency and cancer. They further help to clarify the concept of a possible cancer-related personality type.

CHAPTER ONE
INTRODUCTION

This is a study in personality theory. Its purpose is to provide empirical evidence for or against a hypothesis that the development of cancer is partly a function of personality. Results of this study will impact the field of personality, the continued research of cancer as a psychophysiological disorder, and the area of psychological interventions for the prevention and treatment of cancer.

Conflict theory, the view of personality and behavior as products of global opposing forces, is the foundation for the hypothesis. Freudian psychoanalytic theory is a psychosocial version of the conflict position. David Bakan (Appendix A), who hypothesizes a relationship between personality and cancer, takes the intrapsychic conflict position (Maddi, 1968). This position holds that the failure to achieve and maintain a dynamic balance between the two major life tendencies--essentially the tendency toward individuation and the tendency toward integration--leaves the organism in a state of instability which, depending upon direction and degree, causes or allows to occur every kind of malfunction from neuroticism to physical illness. Bakan contends that cancer is one manifestation of imbalance between the two forces, which he calls Agency and Communion.

Agency

An agent is a power that acts; agency, the facility or state of acting or exerting power. These words derive from the Latin agere: to drive, lead, act, do (Webster's New Collegiate Dictionary, and The American College Dictionary.)

David Bakan (1966) uses Agency, and his own adjective form, agentic, to refer to the intrinsic force toward autonomy and individuation hypothesized by himself and other personality theorists such as Freud (1920/1950), Rank (1929), and Angyal (1941). The connection between the dictionary definition of agency and this drive in the direction of self and separation is perhaps clarified by the Rankian view that every independent action is both a separation and a self-assertion. Choosing to act--to be an agent--is itself a differentiation of the individual from other people and from the physical environment. Bakan's selection of Agency rather than a more obvious word, such as Angyal's autonomy, seems to be partly for the purpose of designating a principle more general than most of us are used to thinking about. Agency is not a human prerogative. Agency is a basic characteristic of living matter that manifests itself on all levels of organization: in the politics of societies, the behavior of organisms, the functioning of tissues, the separation and differentiation of cells.

Agency characterizes existence as an individual, yet at the same time points to the futility, indeed the non-viability, of the individual in and for itself. The parts of an organism must cooperate or the organism will die. A person's life must merge with the lives of others or succumb to meaninglessness and absurdity. Bakan quotes Hillel: "If I am not for myself, who will be for me?" This speaks of Agency. "But if I am only for myself, what am I?" (Bakan, 1966, p. 14.)

Communion

The other basic directionality of life Bakan calls Communion. Communion comes from the Latin communio, meaning mutual participation (Webster's New Collegiate Dictionary.) It signifies the participation of the individual with a greater whole, a union with others and the world requiring loss of self and self-consciousness. While this aspect has its negative possibilities, as indicated by Otto Rank's appellation "fear of life," Bakan stresses its positive nature. Nowhere does he indicate the notion that the individual might be so overtaken by the communal force as to be totally subsumed. One must assume that he views Communion as unable by definition to be a domineering force. Communion is that which mitigates against domination. Its function seems to be that of bringing the individual into harmony with its context, thereby creating a higher and more meaningful level of organization.

The two forces, Agency and Communion, are in one sense inexorably antagonistic. In another sense, they are complimentary. Through a developmental process of differentiation and integration we become living organisms, develop personalities, form social systems and ecosystems. We resolve the conflict of our dual inheritance only to have it reappear with increasing complexity -- and thus we grow.

Development of the Agentic Personality

Bakan is not specific about the development of a personality dominated by Agency. Among theorists who share Bakan's intrapsychic conflict position, the clearest statement of personality development is provided by Otto Rank (1929, 1945). Both theorists postulate a personality which expresses individuation (Agency) at the expense of unity (Communion). Rank regards this problem as a developmental "handicap" (Maddi, 1968).

According to Rank the exclusion of unity by individuation begins in early childhood, during a critical period in the development of what he calls will. Will, like some aspects of Freud's ego, refers to that sense of self which simultaneously directs psychological growth as an individual and integration with the environment. The earliest manifestation of will is counterwill (Rank, 1945). Around the age of two, a child's most salient sense of self derives from his ability to say no. In resisting environmental

pressures, his parents, even his own impulses, the child affirms himself as a separate person with a volition distinct from other forces. When parents prize their child's emerging personhood while helping the child adapt to the realities of the environment, counterwill normally develops into mature will. But if the child at this stage experiences a hostile environment, either because the parents teach the child that he is "bad," or because he is generally unsuccessful in learning to adapt to the limitations of reality, the result may be a defensive fixation on counterwill. Such an individual in adulthood will tend toward a sense of separateness that is accompanied by hostility and moralistic guilt. The personality is well differentiated, but not well integrated. Lacking a mature will, the individual is disadvantaged in his ability to balance separation from the herd with constructive integration with the world (Maddi, 1968).

Bakan believes that the danger of losing one's balance in personality development lies in the tendency of Agency to repress Communion. Prevailing life-strategies for several hundred years have been agentic. Agency arises as self-protection, self-assertion, self-expansion; as the formation of separations; as isolation, alienation, aloneness; in the urge to master; in repression of thought, feeling, and impulse. Agentic strategy has enabled us to make great strides toward conquering the physical environment and

establishing technological societies. But at what cost? Notable among the ills that Bakan associates with unmitigated Agency is cancer. In what he calls the Freudian theory of cancer, Bakan explores the rationale for a connection between cancer and agentic features of personality and indicates lines of empirical investigation leading to this possible conclusion (1966, Chapter V).

The Freudian Theory of Cancer

Freud spoke of the instincts as mental representations of somatic processes. He identified conversion hysteria, in which the inhibition of a physical function accompanies a psychological repression. It was Freud's intention that psychoanalytic theory address the whole person. He further believed that the intrapsychic mechanisms discovered through psychoanalysis had relevance to the study of cellular phenomena.

In Beyond the Pleasure Principle (1920/1950) Freud proposed a death instinct which resides both in the ego and in the individual cell. The normal purpose of this death instinct is to promote the interests of the individual, as opposed to the collective, leading to death from forces "immanent in the organism itself" (p. 51). It may be said that the death instinct preserves and protects the individual from external forces so that it can die in its own time, of its own volition. Motives associated with this process are self-preservation, self-assertion, mastery,

separation of the organism from the outside world, and repression (Freud, 1920/1950; Bakan, 1966). Bakan quotes Freud: "A strong egoism is a protection against falling ill, but in the last resort we must begin to love in order not to fall ill, and we are bound to fall ill if, in consequence of frustration, we are unable to love" (Bakan, 1966, p. 171).

The very defenses which function to protect the organism from destruction from without, if unchecked, will destroy the organism from within. An over-defended ego is cut off from the healing eros, the life instinct, operative in loving and relating. Freud viewed such an imbalance between the internal narcissistic needs, and the external interpersonal needs, as incompatible with life. An individual thus insulated from its kind cannot maintain health. The organism's efforts toward self-preservation in this over-defended position result instead in a vicious circle of greater insulation and greater imbalance.

Bakan noticed a parallel between Freud's reasoning and the experimental findings of Hans Selye (Bakan, 1968, p. 26 ff). Selye (1956) described diseases of adaptation, in which automatic physiological reactions associated with self-preservation are self-injurious. Freud and Selye, says Bakan, are looking at the same process: the individual becoming ill from immanent forces elicited under conditions of actual or potential threat, "which run off automatically

outside the dominion of conscious control" (1968, p. 44). These reactions, because of their automaticity, bear no direct relationship to the duration or degree of external danger and can only be mitigated by the mechanism of surrender (Selye, 1956), so that the body will stop defending itself. Freud treated psychological defenses in this same way in the beginning stages of psychoanalysis.

The parallel with Selye may be useful in clarifying the somatic process represented by Freud's death instinct. Additional clarification is provided by the allusions to cancer in Freud's writings. Bakan believes it was no coincidence for Freud to begin theorizing on the death instinct during the time that he was developing a cancerous growth in his jaw and palate. He revealed the discovery of his tumor, calling it a tissue rebellion, about two years after the first publication of Beyond the Pleasure Principle (Jones, 1957). Bakan finds this book to be self-analytical, as was characteristic of some of Freud's work. In Beyond the Pleasure Principle, there is a specific reference to "malignant neoplasms" (p. 68), where Freud states that malignant cells have become narcissistic in the same way that the personality becomes narcissistic without healthy interpersonal relationships. This follows an attempt to establish a relationship between the death instinct and asexual reproduction (pp. 62 ff.).

In context of Freud's holistic orientation, particularly his linking of what takes place between organism and

environment with what takes place on the cellular level, Bakan finds Freud to be using the idea of the death instinct to get at the psychological component of the state in which cancer occurs. The terms Agency and Communion are analogous in a broad sense to death instinct and life instinct. More specifically, they are equivalent to the strong egoism of which Freud spoke, and the love (Freud) or surrender (Selye) which mitigates against self-destruction. Where Freud suggested that the behavior of cancer cells was a manifestation of narcissism, Bakan chooses to say that cancer is an agentic disease.

CHAPTER TWO
REVIEW OF THE LITERATURE

Bakan cites a number of studies relating psychological and interpersonal phenomena to the development of cancer (1966, p. 17 ff.). He points out that the body of research is sparse, that studies have largely been conducted outside of Freudian contexts, and that each study taken by itself allows alternative explanation of the data. It is their collective impact, he says, which lends validity to the Freudian theory and suggests an association between unmitigated Agency and cancer. Much the same can be said of the research that has been conducted since Bakan's 1966 publication. More recent studies of personality and cancer have been improved by the more frequent use of control groups. The body of research is still sparse, however, and there is no study which attempts to focus on the Agency/Communion aspect of personality.

Categories that appear in the literature, and which Bakan believed were indicative of unmitigated Agency as a factor in the etiology and course of neoplastic disease, are sexual maladjustment, inhibition of aggression, loss of a significant person, lack of social involvement, and inhibition of maternality. Repression is a sixth category

which appeared in the literature after Bakan's publication, which also lends support to his views.

Sexual Maladjustment

Sexual relationships are one channel for expression of Communion through intimacy with another person. In the case of sexual maladjustment, Communion is impaired in its ability to mitigate against domination of the personality by Agency. Studies on the sexual functioning of women with breast cancer or cervical cancer indicate a tendency toward sexual maladjustment. One study found evidence of sexual maladjustment in men with prostate cancer.

Tarlau and Smallheiser (1951) and Wheeler and Caldwell (1955) found rejection of the feminine role and negative feelings toward sexual relations in women with cancer of the breast and women with cancer of the cervix. Bacon, Renneker and Cutler (1952) found sexual inhibition and frustration at a higher level in the personalities and histories of women with breast cancer than had been observed in neurotic women. These investigators also found in an intensive study of five of their subjects that they chose mates who were cold, sadistic, alcoholic, seclusive, impotent, uninterested, opposed to having children, or monumentally narcissistic (Renneker, 1963).

In some breast cancer subjects, Renneker (1963) found a tendency to act out by becoming sexually promiscuous after the disruption of a relationship. Cobb

(1953) observed a "sexual preoccupation leading to multiple marriages" in her study of men with cancer of the prostate gland (p. 52).

Reznikoff (1955) studied TAT responses of women with breast cancer, benign breast tumors, and no tumors, and found the cancer group to exceed both the benign tumor group and the no tumor group in responses of alienation toward masculine figures. He also found the benign tumor group to exceed the no tumor group in such responses, suggesting an ascending order in the correlation between feelings of alienation toward men and degree of breast pathology. In the same study, the cancer group tended to have married later in life and reported a greater frequency of unhappy marriages. Lerer (1975) compared histories of breast cancer subjects with histories of benign tumor subjects. Those with malignant tumors had been less assertive, had developed fewer interpersonal relationships, had used less successful and more archaic defense mechanisms, and had exhibited a higher degree of frigidity, than did subjects with benign tumors.

Several of these studies have methodological problems. Tarlau and Smallheiser (1951) and Wheeler and Caldwell (1955) did not design their studies to determine whether the subjects' negative feelings were a premorbid condition, or whether they might result from lowered sexual self-esteem accompanying perception of their disease. A similar criticism can be made about Reznikoff's (1955) alienation toward masculine figures

on the TAT. Cobb (1953) did not use a comparison group. These problems are avoided by Bacon et al. (1951), Renneker (1963), and Lerer (1975) who do use comparison groups, and who focus on long-term life style and historical data. Their studies are, however, open to the criticism that they failed to control for known medical risk factors.

Inhibition of Aggression

According to Freud, aggression is a way of directing the death instinct outward. "It is extremely telling," says Bakan, "that one should find cancer patients to be people who are remarkably unable to express aggression." (1966, p. 198). He supports this with the findings of six studies. Cobb (1953) observed that prostate cancer patients do not express aggression, are compliant and superficially cooperative. A majority of Bacon, Renneker and Cutler's breast cancer subjects had no technique for discharging anger, and in fact denied ever having been angry (Bacon, et al., 1952; Renneker, 1963). Life histories of cancer patients indicated that twice as many showed inhibition of aggression as compared with a cancer-free group (LeShan & Worthington, 1956b). Rate of growth of malignant tumors of the same type has been observed to differ among individuals, with the extremely polite and acquiescent tending to have more rapidly progressing diseases than the more expressive personalities, and those who might be described as too mean to die (West, 1954; Blumberg, West & Ellis, 1954).

Bakan notes one study (LeShan & Gassman, 1958) in which a patient achieved measurable though temporary shrinkage of visible metastatic growths, following some 45 hours of intensive psychotherapy resulting in her ability to ventilate and accept hostility toward her children. This study can only suggest the possibility of a cause-effect relationship and cannot be taken to confirm that suppressed hostility directly affects tumor growth. A later study (Greer & Morris, 1975), however, confirms the conclusion of LeShan and Worthington, that cancer patients show inhibition of aggression as a trait of personality. Greer and Morris compared women with malignant breast tumors and women with benign breast tumors, during the period of time between report of symptoms and diagnosis. They found that the cancer subjects showed a pattern of abnormal release of anger, usually extreme suppression, which was both contemporary and existing throughout previous adult life. Their innovative design controls for the effect on emotional response which might result from the subjects' awareness of having cancer. In this case, all subjects were awaiting diagnosis and did not know whether their conditions were benign or malignant. It would have been wiser, however, for the investigators to follow the benign tumor group to see whether any of them developed malignant tumors within a ten year period after the first biopsy, since there is a higher incidence of subsequent cancer among women who have had biopsies.

A related study by Kissen and Eysenck (1962) provides evidence which may be conflicting, depending upon how it is interpreted. Male cancer patients were found to rate higher on "extraversion" and lower on "neuroticism" than their controls. Since these investigators equated low neuroticism with diminished outlet for emotional discharge, their conclusions agree with the others. Kissen (1963) conducted another study on emotional discharge in males with cancer and confirmed that this group does tend to bottle up and conceal emotional difficulties. The Kissen and the Kissen and Eysenck studies are both disputed by Huggan (1968a), who disagrees with their interpretation and with their method of collecting data, which was by self-report. Huggan believed subjects had distorted their self-ratings in order to be perceived more positively, but allows that "faking good" can itself be evidence of inability to discharge negative affect. Interestingly, another investigator found elevated MMPI lie scale scores in cancer patients (Schonfield, 1975). These subjects were all women. Hagnell (1966) reported a significant association between personality traits resembling extraversion and cancer in women, but not in men. He was unable to explain his findings.

Loss of a Significant Person

Losing one's primary source of love and belonging deals a nearly mortal blow to the communal side of the personality. Might not the void created by such an absence leave the

individual temporarily at the mercy of agentic processes? Loss of a significant person as a precursor is one of the oldest observations to be made about cancer. Some physicians began hypothesizing in the eighteenth century that the death of a near relative, or the grief associated with the death, might somehow be related to the subsequent development of a malignancy, because it seemed so frequently the case that their patients had experienced such a loss shortly before the onset of cancer (Bakan, 1966). Results of psychoanalyses of 100 cancer patients in 1926 led to the conclusion that a precipitating factor was object loss (Evans, 1926). Controlled studies, for the most part, have confirmed recent loss of a significant person as occurring more often in the histories of cancer patients than in control groups (Peller, 1940; Bacon et al., 1952; Greene, 1954; LeShan & Worthington, 1956a; Green & Miller, 1958; Neumann, 1959; Muslin & Pieper, 1962; Muslin et al., 1966). The most recent study comparing life histories of cancer patients with controls fails to confirm this theory, finding no significant difference in loss of a significant person between the cancer group and the cancer-free group (Schonfield, 1975).

Lack of Social Involvement

One indicator of a healthy balance between Agency and Communion is the presence of satisfying interpersonal relationships. Bakan points to two previously cited studies

showing lack of social involvement as characterizing the personalities of cancer patients. Cobb (1953) found her subjects not only to avoid emotional involvement, but also to have had "difficulty in making their way into a world of adequate social relationships" (p. 254). Reznikoff's (1955) subjects had fewer interests outside the home, as well as husbands who spent less time with them, than did the control group of healthy women. Later studies agreed with these findings. Booth (1960) found secretiveness and autistic orientation toward others in cancer patients, and classified them as anal types. Brown, Katz, and Kaufman (1961) interpreted House, Tree, Person drawings made by cancer patients as showing egocentricity and defective interpersonal relationships.

The argument should be made that it is difficult to tell whether we are measuring precipitating psychological events, or measuring psychological reactions to disease. One approach to this issue has been to study breast cancer and benign tumor subjects who have not yet been biopsied, such as the study that was conducted by Greer and Morris in 1975, where subjects found to suppress anger were subsequently diagnosed as malignant. Another approach is to gather data from the subjects' premorbid histories, as did Lerer (1975), who found breast cancer patients to have been less assertive and to have had fewer interpersonal relationships than those whose tumors were benign.

Abse, Wilkens, and Vande Castle (1974) studied lung

cancer subjects and compared them to their healthy age mates. He found that older subjects were more like their age mates, exhibiting no significant differences between the two groups above age 56. Since cancer tends to correlate more highly with age than with any other known variable, it may be that earlier-onset cancer would be more likely to involve a psychological predisposing factor. This was the case with Abse's subjects. Below age 56, the cancer group did differ significantly from their counterparts. Younger cancer patients were characteristically more overly conscientious in work attendance, less active socially and sexually, markedly more constricted in interpersonal relationships, and more troubled in handling dependency needs than their healthy age mates.

Inhibition of Maternality

The normal mother-child relationship strikingly exemplifies Communion. Maternal feelings represent a loss of self through union with another being, which transcends the separateness of individuals. Two studies of maternality in female cancer patients are cited by Bakan (1966) both indicating its inhibition or absence. No others appear in the literature. Bacon et al. (1952), out of 40 female cancer patients, found only one who had a desire for children. They speculated that a psychological block against pregnancy might somehow create a disturbance in hormonal balance which contributed to the development of breast cancer. Reznikoff (1955) found that cancer subjects, as compared with benign tumor and no tumor groups, were more ambivalent toward

taking on the responsibility of children and "distinctly more fearful and threatened by the birth process" (p. 101).

Repression

There are three studies in the literature which do not fall into the research categories mentioned by Bakan, but which can be interpreted as supporting the theory of a relationship between cancer and the agentic feature. These studies indicate repression (one manifestation of Agency) as a personality characteristic of individuals who develop cancer. Bahnson and Bahnson, in 1967 and again in 1969, found strong repression and denial as life-long, continually utilized defense mechanisms in persons who develop cancer. Huggan (1968a) confirmed this, finding in particular repression of anxiety.

Concerning the psychosomatic view of cancer, Grinker (1966) points out that its proponents are not searching for or claiming a psychological cause. Causes are presumed to be simultaneously psychological and somatic. The task is to become able to identify the psychological variables which interact with physiological variables to affect etiology, development, therapy, and outcome for the patient.

The Structure of Personality

As with the perennial issue of nature versus nurture, we cannot differentiate between characteristics of the premorbid personality and possible effects on a subject's

contemporary personality of the disease process. It must be acknowledged that this somewhat cloudy area exists in all attempts to study personality. It should also be noted that personality is a highly stable configuration of psychological traits which ordinarily are not subject to dramatic change and which do not fluctuate as a function of the social and biological pressures of the moment.

According to Freud, the formative period for personality development is early childhood. Those processes which Freud referred to as id are present at birth. Those processes which he called ego begin to differentiate from id at birth and are massively impacted by the early environment, so that the learning which determines an individual's traits and characteristics is a product of heredity and the particular environment available during the formative period. Those processes which Freud called superego are introjected from the parents when ego is developed sufficiently that the child is capable of self-perception and parental identification, beginning about age two or three. Superego's values further modify the ego, and by about the age of five the basic personality is formed (Freud, 1953). Not all personality theorists, even those identified with Freud, adopt so radical a position on the early closure of personality. The consensus, however, is that if personality changes at all, it changes very slowly (Maddi, 1968).

CHAPTER THREE
METHOD

The intention of this study is to compare two groups -- a cancer group and a non-cancer group -- on degree of dominance of the personality by agentic features as described by David Bakan. Theoretically, all motives can be classified as either agentic of communal. For the sake of accuracy, only those traits and conditions named by Bakan were measured. They are

Agency	Communion
self-protection	sense of oneness with other organisms
self-assertion	
self-expansion	
separation	lack of separation
isolation	contact
alienation	openess
aloneness	union
mastery	noncontractual cooperation
repression	lack and removal of repression

It was hypothesized that the cancer group would exhibit a significantly higher ratio of Agency over Communion than the non-cancer group.

Subjects

The cancer group was composed of adult outpatients at the University of Florida Shands Teaching Hosptial. They were selected on the basis of current diagnosis of systemic cancer and homogeneity with respect to prognosis. Selected subjects had known their diagnoses for at least one month prior to testing, in order to minimize any possible post-traumatic effect on their test-taking behavior, and were expected to live for a year or more.

It should be noted that patients under treatment for cancer at Shands do not represent a random sample of people with cancer. These patients are engaged in seeking the help and support of others. In contrast to portions of the population who receive their diagnoses and go home to die, or pursue some form of self-treatment, patients at Shands are mong the most communal of the cancer population. While this pre-selection factor may have made it more unlikely to find a significantly higher Agency/Communion ratio in the cancer group, the risk of Type I error was reduced.

The non-cancer group was composed of 30 subjects who had no history or symptoms of cancer. They were drawn from a larger pool of volunteers solicited from college students, university employees, hospital visitors, and friends and relatives of the cancer subjects. The 30 used to make up the comparison group were chosen by matching with the cancer

group for known medical risk factors in the disease population. Paired subjects with criteria for pairing are described in Appendix B.

Risk factors associated with specific diseases represented in the cancer group were obtained from etiological and epidemiological data compiled by Fraumeni (1975) and Schottenfeld and Fraumeni (1982). Age tends to correlate with cancer in general; sex tends to correlate with some types of cancer, as well as with some personality variables (Jackson, 1974). Age and sex were therefore used as pairing criteria in every instance. Occupational exposures, such as to ionizing radiation, certain dyes, and certain chemicals, would have been matched had they been found in the cancer group. National origin and race were the same for all subjects. A two- to four-fold increase of risk exists for relatives of persons with cancer of the stomach, large intestine, lung, uterus, and breast; so subjects in these categories were paired with comparison subjects having similar family histories. Lung cancer was also matched for smoking behavior, uterine cancer for age at menarche within one year and age at first pregnancy within two years, and breast cancer for age at menarche within one year, age at first pregnancy within two years and nursing of children. All other cancers were matched only for age within two years and sex. Pairing was blind for all information other than matching criteria.

Instrument

Since no instrument was available that had been designed for the specific purpose of measuring the agentic and communal aspects of personality, one had to be found which measured variables closely approximating Bakan's descriptions of Agency and Communion. The Personality Research Form, or PRF (Jackson, 1974) was selected to measure Agency and Communion because of the close correspondence of its scale descriptions to Bakan's descriptions of agentic and communal characteristics. The PRF is a personality inventory originally derived from Murray's needs, the theoretical constructs defining internal components of personality and behavior in Henry Murray's theory of personality (Murray, 1938).

Murray, like Bakan, is basically a psychoanalytic thinker. He was trained by members of Freud's inner circle, and his theory of personality makes use of the Freudian conflict model (Maddi, 1968). Also like Bakan, Murray modifies Freudian theory with the position that instincts exist which are compatible with communal life (Murray & Kluckhorn, 1956). Where Bakan does not elaborate on the concrete aspects of personality, Murray (1938) offers extensive classification of personality characteristics, most notably a list of 40 needs including but not limited to the characteristics that Bakan uses to define Agency and Communion.

The PRF has reduced Murray's list of needs into 20 independent personality variables. Form E, used in this study, has 352 items in 20 personality scales and two indicators of test-taking attitudes and validity. It requires about an hour to complete. Reading level is fifth to sixth grade as calculated by the Dale-Chall formula (Dale & Chall, 1948). Twelve of the scales use definitions which either duplicate or very closely approximate the definitional terms employed by Bakan, so these twelve were used to measure Agency and Communion. Agentic scales are Achievement, Autonomy, Cognitive Structure, Defendence, and Harmavoidance. Communal scales are Affiliation, Impulsivity, Nurturance, Play, Sentience, and Succorance.

Using the PRF to Measure Agency

Measuring self-assertion

Self-assertion is measured by the scales Autonomy and Dominance. The definition of Autonomy uses the trait adjectives "uncompliant" and "undominated" and says that the high scorer breaks away from restrictions and may rebel against restraints. The definition of Dominance uses the trait adjective "assertive" and describes the high scorer as expressing opinions forcefully, and enjoying the role of leader.

Measuring self-expansion

Self-expansion is the agentic growth and development of the individual. It is measured by Achievement. The definition of Achievement uses the trait adjectives "striving," "attaining," and "self-improving" and says that the high scorer is willing to put forth effort to attain excellence.

Measuring separation

Agency is manifested in separations, whether of the individual from other individuals or from the environment, or separation as differentiation of parts. Autonomy measures separation of the individual from others, while Cognitive Structure measures the need for psychological division of the world into its separate parts. The definition of Autonomy uses the trait adjectives "free," "independent," "individualistic" and describes the high scorer as not tied to people, places, or obligations. The definition of Cognitive Structure uses the trait adjectives "defining," "explicit," "clarifying," and "precise," all of which refer to carefully distinguishing individual things from other things. The high scorer does not like ambiguity.

Measuring isolation

In addition to implying separation and aloneness, treated above and below, isolation implies restraint from interaction in order to reduce the risk of harm. This aspect of isolation is measured by Harmavoidance. The

definition of Harmavoidance uses the phrases "withdraws from danger" and "stays out of harm's way" and describes the high scorer as not enjoying exciting activity and avoiding risk.

Measuring alienation

Alienation is measured by Defendence. The definition of Defendence uses the trait adjectives "chip-on-the-shoulder," "touchy," "defensive," and "self-condoning" and says that a high scorer suspects that people mean him harm.

Measuring aloneness

Aloneness is measured by Autonomy. The definition of Autonomy uses the term "lone-wolf." The high scorer enjoys being unattached.

Measuring mastery

Mastery as accomplishment is measured by Achievement. The definition of Achievement includes the trait adjective "accomplishing" and describes the high scorer as aspiring to accomplish difficult task. Cognitive Structure measures a form of psychological mastery of one's experience, as in the trait adjectives "exacting," "perfectionist" and "seeks certainty." The high scorer wants all questions answered completely and wants to make decisions based upon definite knowledge. Mastery as ascendency and control is measured by Dominance. The definition of Dominance uses the trait adjectives "ascendent" and "controlling." The high scorer

attempts to control his environment and to direct other people.

Measuring repression

Repression refers both to the psychological defense mechanism which prevents certain material from entering consciousness and to the state of being repressed in the common sense of being restrained from expression. The PRF does not attempt to measure unconscious processes as such. It does, however, measure the traits of rigidity in thinking and defensiveness in behaving which are concomitant with psychological repression. Cognitive Structure is defined in part as rigidity, and Defendence is defined in part as defensiveness. These scales are as close as the instrument will come to measuring this aspect of repression. As for repression in the common sense, Defendence uses other defining trait adjectives which indicate restraint of expression: "secretive," "wary," "rationalizing," "guarded." Low scores on the Impulsivity and Play scales, discussed in the next section, would also be expected of a repessed individual.

Using the PRF to Measure Communion

Measuring the sense of oneness

A sense of oneness with others is measured by Affiliation. The definition of Affiliation uses the trait adjectives "gregarious," "warm," "neighborly" and says that the

high scorer enjoys being with and maintaining association with people.

Measuring lack of separation

One indicator of lack of separation would be low score on a scale measuring separation. Other indicators are the scales that measure traits of togetherness. These are Affiliation, Nurturance, Play, and Succorance, which are described under other headings in this section as they pertain to sense of oneness and contact.

Measuring contact

Contact as direct experience through the senses is measured by Sentience. The definition of Sentience uses the terms "sensuous," "sensitive," "enjoys physical sensations," "notices environment" and describes the high scorer as noticing smells, sounds, tastes, and the way things feel. Contact as close association with others is measured by Affiliation, described above, and by Play, Nurturance, and Succorance. The definition of Play uses the trait adjectives "playful," "jovial," "prankish," "sportive" and says that the high scorer spends a good deal of time participating in games, sports, and social activities. The definition of Nurturance uses the trait adjectives "aiding," "ministering," "assisting" and says that the high scorer gives comfort, assists others, and is interested in taking care of others. The definition of Succorance uses the traits "help

seeking" and "craves affection." The high scorer seeks contact in the form of love, protection, and advisement.

Measuring openness

Openness as the state of being natural, unabashed, and unconcealed is measured by Impulsivity and Succorance. The definition of Impulsivity includes the traits of spontaneity and incautiousness, and Succorance includes "confiding." Also measured by Succorance is "defenselessness," which implies openness in the sense of lacking protection. The high scorer on Impulsivity speaks freely; the high scorer on Succorance confides readily.

Measuring union

Union is measured by Affiliation, Nurturance, and Succorance, described above. All are ways of joining with others. Nurturance includes maternal/paternal feelings, which would seem to create a deeper sense of union than that required by friendship or dependence.

Measuring non-contractual cooperation

Non-contractual cooperation is measured by Affiliation. A defining trait adjective of Affiliation is "cooperative." Nurturance also indicates non-contractual cooperation, in that it measures helpfulness and assisting, and the high scorer offers a helping hand.

Measuring lack and removal of repression

Low scores on scales measuring repression would be one indicator of lack of repression. Scales that directly indicate lack or removal of repression are Impulsivity and Play. The definition of Impulsivity uses the defining trait adjectives "uninhibited," "irrepressible," "impulsive" and says that the high scorer gives vent to feelings and wishes, and expresses emotions. Play indicates lack or removal of repression in the sense of being restrained or subdued. The defining trait adjectives for Play include "laughter-loving," "jolly," "prankish," "gleeful" and the high scorer is lighthearted and does many things for fun.

Validity and Reliability of the PRF

Concurrent validity

Jackson and Guthrie (1968) studied correlations between PRF scale scores, behavior ratings by peers, and self-ratings, in college students. They found correlations of .32 with peer ratings and .45 with self-ratings. A correlation of .18 was significant at the .01 level.

Kusyszyn (1968) studied correlations between a subset of PRF scales and trait ratings by peers in college students and found a median correlation of .40. When the raters shared living quarters with the assessees, the correlation was .47. A correlation of .29 was significant at the .01 level for the total sample, and a correlation of .42 was significant at the .01 level for the group living together.

In the total sample, the PRF scale Autonomy correlated significantly with peer ratings at the .05 level, while all others in the subset correlated significantly at the .01 level. In the group living together, Aggression and Nurturance correlated significantly with peer ratings at the .05 level, while all others in the subset correlated significantly at the .01 level.

Jackson (1974) reported median correlations, using all 20 PRF content scales, of .56 with trait ratings by peers and .52 with behavior ratings, in college students. A correlation of .28 was significant at the .05 level, and of .36 at the .01 level. The Abasement scale did not correlate significantly with either behavior ratings or trait ratings in this particular study, although it did in others. Sentience did not correlate significantly with behavior ratings, but with trait ratings it did correlate significantly at the .01 level. Among the other 36 correlations obtained in the study, 29 were significant at the .01 level, and seven were significant at the .05 level.

From a replication of this study, Jackson (1974) reported median correlations of .49 with behavior ratings and .54 with trait ratings. A correlation of .31 was significant at the .05 level, and .40 was significant at the .01 level. Again, Sentience did not correlate significantly with behavior ratings, but did correlate significantly at the .01 level with trait ratings. The same was true for

Understanding, which in the original study correlated significantly with both behavior and trait ratings. Also differing from the original study was Abasement, which did correlate significantly this time with both other measures. Of the 34 remaining correlations, 30 were significant at the .01 level, and four were significant at the .05 level. These studies demonstrate the convergent validity of the PRF, with the reported correlation coefficients exceeding those usually found for personality inventories.

Discriminant validity

In order to measure discriminant validity as well as convergent validity, Jackson (1966) developed a procedure which he called multimethod factor analysis. This procedure, used to correlate a number of traits measured by a number of methods, results in a matrix which shows only heteromethod validity coefficients, so that common factors cannot be influenced by monomethod variance.

Jackson and Guthrie (1968) used multimethod factor analysis to measure the PRF scales by three other methods: self ratings, peer ratings, and behavioral descriptions. They reported exceptional regularity in the loading of the appropriate factors with PRF scales. The 20 scales loaded on 18 factors, with two factors being defined by two PRF scales and criterion measures. One of these two factors was loaded positively by three Dominance measures and negatively by three Abasement measures. The other was

positively loaded by three Aggression measures and negatively by three Impulsivity measures. All other factors were defined by single sets of PRF scales and criterion measures. Jackson concluded that each scale provided a unique contribution to the assessment of personality.

Reliability

Item analysis of the PRF shows unusually good homogenity for personality scales (Jackson, 1974). For the 20 content scales, Jackson reported .91 as the median of lower bound Kuder-Richardson formula 20 values, with a range of .80 to .94.

In a study of the stability of PRF scores, Bentler (1964) found test-retest reliabilities over one week's time ranging from .69 to .90 for the content scales, with a mean reliability of .80. These were considered lower bound estimates, since the testing conditions were not identical.

Odd-even reliabilities over two weeks' time were reported by Jackson (1974). Reliabilities ranged from .72 to .92, with a mean reliability of .85 for content scales.

PRF-E, the form used in this study, reduces the number of items per scale to the best 16 out of the 40 original items per scale. Since reliability is influenced by test length, Form E compromises somewhat between higher reliability and shorter testing time. Two samples of PRF-E odd-even reliabilities are reported by Jackson (1974). In a sample of psychiatric patients, reliabilities for con-

tent scales range from .29 (Cognitive Structure) to .84, with a mean reliability of .73. In a sample of college students, reliabilities range from .50 to .91, with a mean reliability of .68.

Procedure

Selected subjects were asked to read and sign an informed consent form (Appendix C) and to provide personal data for matching purposes, as outlined in the section on Subjects. Each subject was given the self-administered Personality Research Form in an area suitably free from distraction.

Scoring

The PRF was scored according to standard procedure for the instrument, resulting in a score for each scale ranging from 0 to 16. The six agentic scale scores were added together, and the six communal scale scores were added together. These were expressed as an Agency/Communion ratio for each subject and converted to decimal form for ease in comparison.

Analysis of the data

The hypothesis that the Agency/Communion ratio would be larger for the cancer group than for the non-cancer group was tested for statistical significance by a comparison of difference scores. Because of the directionality of the hypothesis, a one-tailed test was used. The non-randomness

of the samples and the matched group design indicated the use of Sandler's A-statistic, a derivative of Student's T which is preferred over T for ease of computation (Sandler, 1955). An alpha level of .05 was selected.

A comparison was made between the agentic variables only, and between the communal variables only, to determine whether the source of the difference between the two groups lay more in one of these dimensions than in the other, or whether the difference lay exclusively in the ratio of Agency over Communion. A scale by scale comparison was then made in order to note more specifically the degree of contribution by each scale to the overall difference between the groups.

CHAPTER FOUR
RESULTS

Results of the study are summarized in Tables 1 through 5. Computation of Sandler's A showed the Agency/Communion ratios for the cancer group to be significantly higher than the Agency/Communion ratios for the non-cancer group. The computed A value was 0.12. The table value of A for a one-tailed test with 29 degrees of freedom is 0.368 or less for significance at the 0.05 level, 0.193 or less for significance at the .01 level, and 0.161 or less for significance at the .005 level. Therefore the difference between the two groups was significant at the .05 level, as hypothesized, as well as at the .01 level and the .005 level.

A comparison of the agentic scales only showed the cancer group to be significantly higher than the non-cancer group in Agency independent of Communion. The computed A value was 0.29, which was significant at the .05 level. Also, a comparison of the communal scales only showed the cancer group to be significantly lower than the non-cancer group in Communion independent of Agency. The computed A value was 0.13, which was significant at the .01 level.

A scale by scale comparison of differences between the two groups indicated the following:

Of the agentic scales, the greatest difference was in Cognitive Structure, followed by Harmavoidance, Defendence, Autonomy, and Dominance. Achievement had no bearing on the overall difference between the two groups, showing a slight negative difference approaching zero. Of the communal scales, the greatest difference was in Play, followed by Succorance, Nurturance, Sentience, Impulsivity, and Affiliation. Three of the 12 scales showed differences of a magnitude reaching significance independent of any other scale score. Cognitive Structure was higher in the cancer group than in the non-cancer group, with significance at the .05 level. Play and Succorance were lower in the cancer group than in the non-cancer group, Play being significant at the .0005 level, and Succorance at the .01 level. When the groups were broken into subgroups by sex, comparison of Agency/Communion ratios showed that both the female and the male cancer subgroups scored significantly higher than their non-cancer counterparts. The females-only difference was significant at the .01 level, and the males-only difference was significant at the .05 level.

There was no significant difference between the two groups on either the Infrequency scale (measuring random responding, lack of understanding, or deciption) or on the Desirability scale.

TABLE 1

Agency/Communion Ratios and Difference Scores of Paired Subjects

Pair #	Cancer group	Non-cancer group	Difference	Difference^2
1	0.82	1.17	-0.35	0.12
2	1.41	0.85	0.56	0.31
3	1.42	0.87	0.55	0.30
4	1.71	0.81	0.90	0.81
5	1.38	1.12	0.26	0.07
6	0.87	0.42	0.45	0.20
7	0.78	0.52	0.26	0.07
8	1.14	0.84	0.30	0.09
9	1.16	1.93	-0.77	0.59
10	1.14	1.11	0.03	0.00
11	2.03	1.41	0.62	0.38
12	1.00	0.45	0.55	0.30
13	1.28	1.15	0.13	0.02
14	1.07	0.58	0.49	0.24
15	1.00	1.21	-0.21	0.04
16	1.08	0.89	0.19	0.04
17	0.73	0.68	0.05	0.00
18	1.04	0.49	0.55	0.30
19	1.04	0.93	0.11	0.01
20	1.09	1.40	-0.31	0.10
21	1.04	1.04	0.00	0.00
22	0.76	1.42	-0.66	0.44
23	1.22	0.65	0.57	0.32
24	0.98	1.40	-0.42	0.18
25	2.31	0.63	1.68	0.28
26	0.87	0.81	0.06	0.00
27	1.28	1.18	0.10	0.01
28	1.46	0.74	0.72	0.52
29	0.85	0.75	0.10	0.01
30	1.74	1.17	0.57	0.32
			$\Sigma D=7.08$	$\Sigma D^2=5.83$
			$(\Sigma D)^2=50.13$	

TABLE 2

Computations of Sandler's A for Agency/Communion Ratios, Agency only, and Communion only

$A = \Sigma D^2 / (\Sigma D)^2$ df = 29

Agency/Communion

$A = 5.83 / 50.13$

A = 0.12

A(29) = 0.12, $p < .005$

Agency

$A = 6339 / 22201$

A = 0.29

A(29) = 0.29, $p < .05$

Communion

$A = 8229 / 62001$

A = 0.13

A(29) = 0.13, $p < .01$

TABLE 3

Values of $\underline{A}$ for Individual Scales in Descending Order of Contribution to Overall Difference

Agentic Scales:	A-values
Cognitive Structure	0.23*
Harmavoidance	0.63
Defendence	0.70
Autonomy	0.74
Dominance	1.66
Achievement	112.50**

Communal Scales:	A-values
Play	0.08***
Succorance	0.17****
Nurturance	0.42
Sentience	0.54
Impulsivity	2.39
Affiliation	3.35

*significant at .05 level
**did not contribute to overall difference
***significant at the .0005 level
****significant at the .01 level

TABLE 4

Agency/Communion Ratios and Difference Scores of Female Subjects Only, and Computation of Sandlers A

Cancer group	Non-cancer group	Difference	Difference^2
1.41	0.85	0.56	0.31
1.71	0.81	0.90	0.81
1.00	0.45	0.55	0.30
1.28	1.15	0.13	0.02
1.07	0.58	0.49	0.24
1.00	1.21	-0.21	0.04
1.08	0.89	0.19	0.04
0.73	0.68	0.05	0.00
1.04	0.49	0.55	0.30
1.04	0.93	0.11	0.01
1.09	0.40	-0.31	0.10
1.04	0.04	0.00	0.00
0.76	1.42	-0.66	0.44
1.22	0.65	0.57	0.32
0.98	1.40	-0.42	0.18
2.31	0.63	1.68	0.28
0.85	0.75	0.10	0.01
		$\Sigma D=4.28$	$\Sigma D^2=3.4$
		$(\Sigma D)^2=18.32$	

$A = \Sigma D^2/(\Sigma D)^2$ df = 16

$A = 3.4/18.32$

$A = 0.19$

$A(16) = 0.19$, $p < .01$

TABLE 5

Agency/Communion Ratios and Difference Scores of Male Subjects Only, and Computation of Sandler's A

Cancer group	Non-cancer group	Difference	Difference^2
0.82	1.17	-0.35	0.12
1.42	0.87	0.55	0.30
1.38	1.12	0.26	0.07
0.87	0.42	0.45	0.20
0.78	0.52	0.26	0.07
1.14	0.84	0.30	0.09
1.16	1.93	-0.77	0.59
1.14	1.11	0.03	0.00
2.03	1.41	0.62	0.38
0.87	0.81	0.06	0.00
1.28	1.18	0.10	0.01
1.46	0.74	0.72	0.52
1.74	1.17	0.57	0.32
		$\Sigma D = 2.8$	$\Sigma D^2 = 2.68$
		$(\Sigma D)^2 = 7.84$	

$A = \Sigma D^2/(\Sigma D)^2$ df = 12

$A = 2.68/7.84$

$A = 0.34$

$A(12) = 0.34$, $p < .05$

CHAPTER FIVE
SUMMARY AND DISCUSSION

Conclusions

The primary objective of this study was to determine whether certain characteristics of personality approximating Bakan's definitions of Agency and Communion are associated with cancer. Results indicate that such an association does exist. Following are the four findings presented in the previous chapter, discussed according to their contributions to an understanding of this association, as well as their indications for Bakan's theory.

1. The Agency/Communion ratio was significantly higher for subjects in the cancer group than for subjects in the non-cancer group. This finding strengthens Bakan's theoretical position by supporting his assertion that cancer is associated with an agentic personality. Bakan has made the suggestion that the relationship between personality and cancer is possibly etiological. Alternative interpretations are also possible; for example, agentic characteristics of personality may constitute secondary symptoms of cancerous conditions. Based on current knowledge of the stability of personality and the reliability of its measurement, the symptomatic explanation is unlikely. Within the present

research design however, such alternative interpretations cannot be ruled out.

2. The cancer group scored both significantly higher on the agentic scales, and significantly lower on the communal scales, than did the non-cancer group. This strengthens Bakan's theoretical position by its consistency with his view of the interaction between Agency and Communion: that Agency tends to suppress Communion, and Communion tends to mitigate against domination by Agency. This view would predict that an abundance of Agency would keep Communion at a relatively low level, or similarly, that a low level of Communion would permit the development of a relatively high degree of Agency by failing to mitigate against the tendency of Agency to dominate.

3. Comparison of the cancer group and the non-cancer group on single scale scores shows considerable variation. A values range from 0.08, a significant difference at the .0005 level, to 112.50, indicating nearly identical performance of the two groups. The most dramatic differences between the groups are found in Play, Succorance, and Cognitive Structure. The cancer group showed a relative depression on the Play and Succorance scales, and a relative elevation on the Cognitive Structure scale. On the basis of these data, typical personality traits of a person who has cancer might likely be high need for certainty, definition, and precision; perfectionist tendencies; rigidity and self-

control; combined with lack of playfulness, and avoidance of or resistance to the help, protection, and support of others.

This finding is compatible with Bakan's position. But Bakan does not speculate on the fine points of what might be the typical personality profile associated with cancer--only that the personality characteristics associated with cancer would indicate domination by Agency. The tentative assertion of a type, then, constitutes a refinement of Bakan's theory.

4. Performance on the Infrequency and Desirability scales shows no significant difference between the two groups. This indicates that the performance of both groups is equally credible. It is further worthy of mention because it disagrees with the conclusions of Huggan (1968a), cited in Chapter Two, that cancer subjects distorted their self-ratings more than control subjects and is inconsistent with the findings of Schonfield (1975) that cancer patients had elevated lie scales on the MMPI, also cited in Chapter Two.

Impact of the Study

Theoretical Impact. One of the functions of theory is to generate testable hypotheses, which in turn can generate data. The data can then be fed back into the theory to modify, strengthen or refine it, and to generate new hypotheses. A major thrust of this study was to bring the data

to bear on David Bakan's theory of personality, particularly his Freudian theory of cancer. It can now be said that Bakan's position bears up under empirical scrutiny. Two directions are conceivable as emerging from the data: development of a typology of personality based on Bakan's theory, and discovery of a specific personality type which may be associated with cancer.

Practical Impact. Efforts toward psychological intervention with people who have cancer should be based on a sound understanding of the psychological correlates of cancer. This is equally true whether the interventions focus on personal adjustment, rehabilitation, coping with grief, or the use of psychotherapy as a treatment modality along with medical interventions. It has been said that knowing what kind of person has a disease is as important as knowing what kind of disease a person has. Results of this study may increase our understanding of the appropriateness and effectiveness of psychological interventions. The as-yet unexplored territory of cancer prevention through promotion of communal climates for the formative stages of personality development is a possible long-range implication of these findings, should further study substantiate the idea that a greater susceptibility to cancer exists in individuals with certain personality traits.

Limitations of the Study

Freudian concepts cannot be thoroughly explored without delving into unconscious processes. It is a limitation of

this or any quantitative study involving Freudian concepts that exploration of the unconscious dimension of personality is sacrificed in favor of the greater accuracy and precision with which we are able to explore the conscious dimension. Similarly, in the conversion of Agency and Communion from abstractions to measurable concrete characteristics, the chance exists that something may be lost. It is hoped that what is gained in empirical clarity and practical applicability is the greater part, and that the integrity if not the entirety of Bakan's theory has been preserved.

Another limitation of the study is simply that it is not longitudinal: the future status of the comparison subjects is unknown. Presentation of the data at this time precludes the opportunity of eliminating subjects from the comparison group should they develop cancer at a later time. While matching for age is a control for the effect of ageing on risk of cancer, additional validity could be gained by following the non-cancer subjects.

Directions for Further Research

Further research is needed to assess the etiological significance of the results of this study. Longitudinal studies are necessary to determine whether or not a greater probability of developing cancer exists in presently healthy persons whose personalities are highly agentic, as well as to follow comparison subjects to see whether they remain cancer-free. Studies of the ways in which personality mediates a possible stress and cancer relationship might also

provide insight into the etiological role, if any, played by personality factors.

Another research area suggested by the results of this study is the question of whether the course and outcome of a disease can be influenced by alleviating repression and developing latent communal aspects of personality. Comparative studies of subjects who had accomplished these changes versus subjects showing no psychological change in this direction would address this question. Finally, replications of the present study in other contexts are important to assess the generalizability of the results.

APPENDIX A
BIOGRAPHICAL MATERIAL ON DAVID BAKAN

David Bakan was born in New York on April 23, 1921. He received his PhD in psychology in 1948 from Ohio State University. Until 1961 he was a member of the faculty of the University of Missouri. He then joined the faculty of the University of Chicago, where he stayed until 1968. Currently he is Professor of Psychology at York University in Toronto, Ontario. Bakan is recognized for his research and writing on Sigmund Freud, on the psychology of religion, and on the scientific method. His own theory of personality emphasizing Agency and Communion was introduced in 1966 in his book The Duality of Human Existence.

Historically, Bakan might be classified as a Freudian. His postulate of ubiquitous opponent forces as the basis of personality and of human culture has its roots in psychoanalytic theory. Yet in one respect Bakan moves sharply away from Freudian thinking: in a word, Freud described psychological functioning as defensive, whereas Bakan confines his treatment of defensiveness to the negative aspects of personality and behavior. Bakan's view of healthy functioning leans toward the tendency for positive growth which characterizes the self-actualization theories of personality.

The hypothesis of a relationship between unmitigated Agency and cancer is David Bakan's unique contribution to the field of personality theory.

APPENDIX B

PAIRED SUBJECTS WITH CRITERIA USED FOR PAIRING

Pair Numbers

1 Cancer subject: white male, age 42, with melanoma.

Non-cancer subject: white male, age 41.

2 Cancer subject: white female, age 40, with cancer of the breast, age at menarche-11, age at first pregnancy-20, did not nurse, no significant family history.

Non-cancer subject: white female, age 39, age at menarche-10, age at first pregnancy-19, did not nurse, no significant family history.

3 Cancer subject: white male, age 24, with melanoma.

Non-cancer subject: white male, age 24.

4 Cancer subject: white female, age 30, with uterine cancer, age at menarche-12, no pregnancies, no significant family history.

Non-cancer subject: white female, age 29, age at menarche-12, no pregnancies, no significant family history.

5 Cancer subject: white male, age 36, with Ewing's sarcoma.

Non-cancer subject: white male, age 37.

6 Cancer subject: white male, age 22, with Hodgkin's disease.

Non-cancer subject: white male, age 22

7 Cancer subject: white male, age 19, with malignant lymphoma.

Non-cancer subject: white male, age 20.

8 Cancer subject: white male, age 24, with Hodgkin's disease.

Non-cancer subject: white male, age 24.

9 Cancer subject: white male, age 28, with Hodgkin's disease.

Non-cancer subject: white male, age 28.

10 Cancer subject: white male, age 56, with Hodgkin's disease.

Non-cancer subject: white male, age 58.

11 Cancer subject: white male, age 66, with carcinoid tumor.

Non-cancer subject: white male, age 65.

12 Cancer subject: white female, age 33, with cancer of the breast, age at menarche-13, no pregnancies, no significant family history.

Non-cancer subject: white female, age 32, no pregnancies, no significant family history.

13 Cancer subject: white female, age 48, with cancer of the thyroid.

Non-cancer subject: white female, age 49.

14 Cancer subject: white female, age 27, with cancer of the breast, age at menarche-10, no pregnancies, no significant family history.

Non-cancer subject: white female, age 27, age at menarche-11, no pregnancies, no singificant family history.

15 Cancer subject: white female, age 50, with metastic colon, no significant family history.
Non-cancer subject: white female, age 49, no significant family history.

16 Cancer subject: white female, age 26, with breast cancer, age at menarche-12, no pregnancies, no significant family history.
Non-cancer subject: white female, age 26, age at menarche-12, no pregnancies.

17 Cancer subject: white female, age 54, with uterine cancer, age at menarche-13, age at first pregnancy -30, no significant family history.
Non-cancer subject: white female, age 54, age at menarche-13, age at first pregnancy-31, no significant family history.

18 Cancer subject: white female, age 31, with acute myelogenous leukemia.
Non-cancer subject: white female, age 31.

19 Cancer subject: white female, age 24, with breast cancer, age at menarche-14, no pregnancies, no significant family history.
Non-cancer subject: white female, age 23, age at menarche-14, no pregnancies, no significant family history.

20 Cancer subject: white female, age 65, with cancer of the colon, no significant family history.

Non-cancer subject: white female, age 65, no significant family history.

21 Cancer subject: white female, age 60, with cancer of the breast, age at menarche-14, age at first pregnancy-25, did not nurse, no significant family history.

Non-cancer subject: white female, age 59, age at menarche-14, age at first pregnancy-27, did not nurse, no significant family history.

22 Cancer subject: white female, age 53, with acute lymphocytic leukemia.

Non-cancer subject: white female, age 52.

23 Cancer subject: white female, age 25, with acute myelogenous leukemia.

Non-cancer subject: white female, age 25.

24 Cancer subject: white female, age 65, with acute myelogenous leukemia.

Non-cancer subject: white female, age 67.

25 Cancer subject: white female, age 35, with breast cancer, age at menarche-12, age at first pregnancy -24, did nurse, no significant family history.

Non-cancer subject: white female, age 35, age at menarche-12, age at first pregnancy-22, did nurse, no significant family history.

26 Cancer subject: white male, age 23, with acute lymphocytic leukemia.

Non-cancer subject: white male, age 24.

27 Cancer subject: white male, age 25, with ganglio-neuroblastoma (brain tumor).

Non-cancer subject: white male, age 26.

28 Cancer subject: white male, age 18, with Hodgkin's disease.

Non-cancer subject: white male, age 19.

29 Cancer-subject: white female, age 60, with lung cancer, has never smoked, no significant family history.

Non-cancer subject: white female, age 59, has never smoked, no significant family history.

30 Cancer subject: white male, age 52, with osteogenic sarcoma.

Non-cancer subject: white male, age 51.

APPENDIX C

INFORMED CONSENT FORM

This is a study investigating a relationship between personality and cancer. Subjects are selected for participation on the basis of current diagnosis and/or treatment of cancer by a University of Florida Health Center physician. There is no monetary compensation for participation.

I understand that I will be given a questionnaire on which I will answer whether a series of statements are true or false as applied to me. My responses are to be kept confidential, and are to be used only for research purposes.

I understand that no hazards to my health will be involved and that no compensation for injury can be received.

I understand that my participation is voluntary and that I may withdraw at any time.

I HAVE READ AND UNDERSTOOD THE ABOVE PROCEDURE IN WHICH I AM TO PARTICIPATE AND HAVE RECEIVED A COPY OF THIS DESCRIPTION.

Signature Date

REFERENCES

Abse, D., Wilkins, M., van de Castle, R., Buxton, W., Demars, J., Brown, R. & Kirschner, L. Personality and behavioral characteristics of lung cancer patients. Journal of Psychosomatic Research, 1974, 18(2), 101-113.

Angyal, A. Foundations for a Science of Personality. New York: Commonwealth Fund, 1941.

Bacon, C., Renneker, R. & Cutler, M. A psychological survey of cancer of the breast. Psychosomatic Medicine, 1952, 14(6), 455.

Bahnson, C. & Bahnson, M. Denial and repression of primitive impulses and of disturbing emotions in patients with malignant neoplasms. Annals of the New York Academy of Science, 1966, 125, 827.

Bakan, D. The Duality of Human Existence. Boston: Beacon Press, 1968.

Bakan, D. Disease, Pain, and Sacrifice. Boston: Beacon Press, 1968.

Blumberg, E., West, P. & Ellis, F. A possible relationship between psychological factors and human cancer. Psychosomatic Medicine, 1954, 16(4), 227.

Booth, G. Lung cancer and personality. International Psychosomatic Cancer Study Group, August 10-13, 1960. (Abstract)

Brown, F., Katz, H., & Kaufmann, M. The patient under study for cancer, a personality evaluation. Psychosomatic Medicine, 1961, 23, 166.

Cobb, A. A social psychological study of the cancer patient. Unpublished doctoral dissertation, University of Texas, 1953.

Dale, E. & Chall, J. A formula for predicting readability. Educational Research Bulletin, 1948, 28, 37-54.

Evans, E. A Psychological Study of Cancer. New York: Dodd, Mead and Company, 1926.

Fraumeni, J. Persons at High Risk of Cancer. New York: Academic Press, 1975.

Freud, S. Beyond the Pleasure Principle. New York: Liveright Publishing Corporation, 1950. (Originally published, 1920.)

Freud, S. The Standard Edition of the Complete Psychological Works. J. Strechey (Ed.). London: Hogarth Press, 1953.

Greer, S. & Morris, T. Psychological attributes of women who develop breast cancer: A controlled study. Journal of Psychosomatic Research, 1975, 19(2), 147-153.

Greer, S. & Morris, T. The study of psychological factors in breast cancer: Problems of method. Social Science and Medicine, 1978, 12(3-A), 129-134.

Greene, W. Psychological factors and reticuloendothelial disease: I. Preliminary observations on a group of males with lymphomas and leukemias. Psychosomatic Medicine, 1954, 16(3), 220-230.

Greene, W. & Miller, G. Psychological factors and reticuloendothelial disease: IV. Observations on a group of children and adolescents with leukemia: An interpretation of disease development in terms of the mother-child unit. Psychosomatic Medicine, 1958, 20, 124-144.

Grinker, R. Psychosomatic aspects of the cancer problem. Annals of the New York Academy of Science, 1966, 125(3), 876-881.

Grissom, J., Weiner, B. & Weiner, E. Psychological correlations of cancer. Journal of Consulting and Clinical Psychology, 1978, 43(1), 113.

Hagnell, O. The premorbid personality of persons who develop cancer in a total population investigated in 1947 and 1957. Annals of the New York Academy of Science, 1966, 125(3), 846-855.

Huggan, R. Neuroticism and anxiety among women with cancer. Journal of Psychosomatic Research, 1968, 12(3), 215-221. (a)

Huggan, R. Neuroticism, distortion, and objective manifestation of anxiety in males with malignant disease. British Journal of Social and Clinical Psychology, 1966, 7(4), 280-285.

Jackson, D. Multimethod factor analysis of convergent and discriminant validity. Paper read at the meeting of the Society of Multivariate Experimental Psychology, Atlanta, Georgia, 1966. Reprinted in Psychological Bulletin, 1969, 72, 30-49.

Jackson, D. Personality Research Form. Goshen, New York: Research Psychologists Press, 1974.

Jackson, D. & Guthrie, G. A multitrait-multimethod evaluation of the Personality Research Form. Proceedings of the 76th Annual Convention of the American Psychological Association, 1968, 177-178.

Jones, E. The Life and Work of Sigmund Freud, Volume III, The Last Phase, 1919-1939. New York: Basic Books, 1957.

Kissen, D. Personality characteristics in males conductive to lung cancer. British Journal of Medical Psychology, 1963, 36 1.

Kissen, D. & Eysenck, H. Personality in male lung cancer patients. Journal of Psychosomatic Research, 1962, 6, 123.

Kusyszyn, I. A comparison of judgmental methods with endorsements in the assessment of personality traits. Journal of Applied Psychology, 1968, 52, 227-233.

Lerer, S. A comparative study of psychological factors in illness of the mammary gland -- cancer and cystic fibrosis. Revista Colombiana de Psiquiatria, 1975, 4(2), 127-144. (Agstract)

LeShan, L. & Gassman, M. Some observations on psychotherapy with patients suffering from neoplastic disease. American Journal of Psychotherapy, 1958, 12, 730.

LeShan, L. & Worthington, R. Loss of cathexis as a common psychodynamic characteristic of cancer patients: an attempt at statistical validation of a clinical hypotheses. Psychological Reprints, 1956, 2, 183. (a)

LeShan, L. & Worthington, R. Some recurrent life history patterns observed in patients with malignant disease. Journal of Nervous and Mental Disorders, 1956, 124, 461. (b)

Maddi, S. Personality Theories, A Comparative Analysis. Homewood, Illinois: The Dorsey Press, 1968.

Murray, H. Explorations in Personality: A Clinical and Experimental Study of Fifty Men of College Age. New York: Oxford, 1938.

Murray, H. & Kluckhorn, C. Outline of a conception of personality. In C. Kluckhorn, H. Murray, and M. Schneider, Eds. Personality in Nature, Society, and Culture (2nd ed.) New York: Knopf, 1956.

Muslin, H. & Pieper, W. Separation experiences and cancer of the breast. Psychosomatics, 162, 3, 230.

Neumann, C. Psychische besonderheiten bei kredspatientinnen. Zeitschrift fur Psychosomatische Medizin, 1959, 5 91-101.

Peller, S. Cancer and its relations to pregnancy, delivery, marital and social status: I. Cancer of the breast and genital organs, II. Cancer of organs other than reproductive: total cancer mortality. Surgery, Gynecology, and Obstetrics, 1940, 71, 1-8.

Rank, O. The Trauma of Birth. New York: Harcord, Brace, 1929.

Rank, O. Will Therapy and Truth and Reality. New York: Knopf, 1945.

Renneker, R. Psychoanalytic explorations of emotional correlates of cancer of the breast. Psychosomatic Medicine, 1963, 25, 11.

Reznikoff, M. Psychological factors in breast cancer: A preliminary study of some personality trends in patients with cancer of the breast. Psychosomatic Medicine, 1955, 17(2), 100.

Sandler, J. A test of the significance of the difference between the means of correlated measures, based on a simplification of Student's t. British Journal of Psychology, 1955, 46, 255-226.

Schonfield, J. Psychological and life-experience differences between Israeli women with benign and cancerous breast lesions. Journal of Psychosomatic Research, 1975, 19(4), 229-234.

Schottenfeld, D. & Fraumeni, J. Cancer Epidemiology and Prevention. Philadelphia: W. B. Saunders Company, 1982.

Selye, H. The Stress of Life. New York: Liveright Publishing Corporation, 1956.

Tarlau, M. & Smallheiser, I. Personality patterns in patients with malignant tumors of the breast and cervix: An exploratory study. Psychosomatic Medicine, 1951, 13(2), 118.

West, P. Origin and development of the psychological approach to the cancer problem, in J. Gengerelli & F. Kirkner, The Psychological Variables in Human Cancer: A Symposium. Berkeley: University of California Press, 1954, p. 24.

Wheeler, J. & Caldwell, B. Psychological evaluation of women with cancer of the breast and cervix. Psychosomatic Medicine, 1955, 17(4), 264.

BIOGRAPHICAL SKETCH

Diana Rivera was born Diana Luise Blanchard on May 5, 1944, in Crown Point, Indiana. She graduated from Crown Point High School in 1962. She majored in psychology at Valparaiso University, receiving the Bachelor of Arts degree in 1972 and the Master of Arts in Liberal Studies in 1974. From 1974 to 1977 Ms. Rivera was a member of the psychology faculty at Valparaiso University. In 1977 she came to Gainesville, Florida, with her daughter, Lisa, to pursue graduate study in rehabilitation counseling at the University of Florida. She was awarded the Master of Health Sciences degree in 1978 and entered the doctoral program in counselor education, specializing in theories of personality and counseling. She was married in 1982 to James H. Pitts. Currently residing in Gainesville, Ms. Rivera is a Florida Licensed Mental Health Counselor and a Certified Rehabilitation Counselor. She expects to receive the degree of Doctor of Philosophy in August of 1983.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Ted Landsman
Professor of Psychology and
Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Janet J. Larsen
Professor of Counselor
Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

James G. Joiner
Associate Professor of
Rehabilitation Counseling

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

John P. Saxon
Associate Professor of
Rehabilitation Counseling

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Roy S. Weiner
Professor of Immunology and
Medical Microbiology

This dissertation was submitted to the Graduate Faculty of the Department of Counselor Education in the College of Education and to the Graduate School, and was accepted in partial fulfillment of the requirements of the degree of Doctor of Philosophy.

August, 1983

Dean for Graduate Studies
and Research