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A COMPARISON OF FACTORS ASSOCIATED WITH PAST USE, PROJECTED USE, AND PERCEIVED COMMUNITY NEED FOR HEALTH AND SOCIAL SERVICES[a]

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Abstract

Life change, political, and demographic factors associated with past use, projected use, and perceived community needs for services by the aged were examined. Data were derived from interviews conducted with men and women 65 or over in a midwestern community. Life changes were more useful in explaining relationships with health and social services among men than were demographic and political variables. But among women, there was less difference in the amount of variance explained by the three groups of variables. Although men and women differed little in the extent to which they had experienced life changes, discontinuity was differentially associated with their responses to health and social services.

The inconsistency between projected use of services, identification of need, and subsequent use of services has received some documentation.[1] Even though comparatively little empirical research is available to support the disparity between anticipated and actual use of services, theoretical questions about the correspondence between attitudes toward particular objects or events and later behavior have been raised frequently.[2] In the instance of health and social services, projected use generally exceeds actual use.

If however, anticipated use is not closely associated with subsequent use, they may have different antecedents. That is, factors which predispose individuals to predict use of a service may be somewhat different from those which are indicators of actual use. Planners for social services may attempt to assess community needs and preferences for

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services by obtaining perceptions of need from potential clients. But factors associated with estimated priorities for community services may differ from correlates of past use or anticipated personal use.[a] This exploratory study compares factors associated with three aspects of health and social services among the aged: past use, projected use and the perceived community need for additional services for the aged.

Much of the available data deal with correlates of utilization of services,[3] and studies of utilization have concentrated primarily on health services. But factors associated with projected use and perceived community needs for services are less well known. In this research variables previously identified as correlates of utilization are examined in relation to projected personal use of services as well as perceived community needs.

The socio-demographic approach to explaining the utilization of medical services has been described by McKinlay.[4] Age, education, and socioeconomic status, for example, have usually been found to be positively related to use of services. Further, women seem to use more services than men and do so increasingly with age. But McKinlay has also suggested that with the possible exception of age and sex differences, socio-demographic conclusions do not reveal in any depth why variations exist and he called for research into the context in which health services are used.

Social psychological correlates of utilization have also been examined with increasing emphasis given to cues which may evoke action or a readiness to act by a person or group. Zola has described triggers in the lives of persons which prompt decisions to seek medical care.[5] In the case of the aged, it is suggested that role losses and life changes may serve as motivators to increase utilization or to enhance perceived community needs. It has been posited that the disruption in previous activities and relationships is more important to the aged than the absolute amount of association or involvement with others. Indeed, many of the conditions among the aged which social services planning is designed to ameliorate are situations associated with changes and losses related to social arrangements.[6]

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[a] In this research community refers to the geographical area encompassed by the city from which the sample was drawn.

Among social psychological concepts, alienation has been considered as a factor in underutilization of services.[7] It has been conceptualized as a general set of expectations for low control over events which may extend to relationships with health and social service providers.[8] A sense of low personal control may be reflected in low levels of interest and knowledge of affairs as a patient,[9] client, or consumer. Alienation, for example, was inversely related to participation in polio immunization[10] and securing other types of preventive care.[11-13] Thus, it might be expected that persons who feel powerless would be less likely to have used services, would project fewer future demands, and hold a more restricted view of community needs. Theoretically one means of securing increased control over life events and perhaps subsequent benefits would be through political action. And political efficacy, which is a subtype of the more general concept of alienation, reflects the extent to which an individual believes personal political action does or can impact the political process.[14]

Provision of services and community programming for the aged increasingly involve political decisions regarding allocation of resources. Thus, in addition to political efficacy, other aspects of the personal context in which anticipated use and perceived community needs are articulated also warrant examination. Beliefs about intervention in political matters by the aged, interest in political issues, and voting behavior are considered in relation to past and projected use and perceived community needs.

Although previous research on the relationship between alienation and the use of services has primarily involved younger persons, the aged are more likely to have experienced a greater number of life changes. Transitions late in the life course may affect perceptions of personal control and perhaps ultimately the demand for services. Theorizing about the impact of life course changes on levels of activity, however, has resulted in contrasting hypotheses. It has been suggested, for example, that discontinuity may be followed by desolation and disruption which may lead to decreased activity and fewer interests.[15] In another perspective, decremental change has been interpreted as a potential consciousness-raising experience which mobilizes persons to engage in activities with the hope of effecting change and gaining benefits.[16-17] This study examines the extent to which life changes (both decremental and incremental) are associated with use and anticipated use of health and social services. Since there is some reason to believe that men and women respond differently to role changes,[18-19] each of the dependent variables (past use, anticipated use, and perceived community needs) are considered separately for men and women.

METHOD

Sample

Data were analyzed from a larger study of the perceived needs of the aged requested by a group of citizens interested in gerontology in a mid-western community of 30,000. Structured interviews were conducted with 62 men and 107 women. All city blocks were numbered and respondents were all persons 65 or over who resided on blocks which were selected by use of a table of random numbers. Respondents ranged in age from 65 to 93 ($\bar{X}$=69 years).

Measures

Indicators of Life Change

Life change and continuity were assessed in the areas of health, income, and organizational participation with each dimension evaluated as having declined, remained the same, or improved (or increased in the case of organizational activities) in recent years. Following Gubrium[20], marital status was categorized to reflect change in social support. The widowed, divorced, or separated have experienced change while the married and never married have had continuous social support. Respondents also estimated change in the frequency with which they were getting out of the house (less, same, more) and whether there were activities which they once enjoyed but were no longer able to engage in.

Reflecting Trela's[21] general meaning of social dislocation, as represented by negative evaluations of later life, perceptions of aging and retirement were measured by summing three items with five point Likert-type response categories. For example: "Older people are in the happiest period of their life;" "Generally speaking, retirement is good for an older person."

Political Activity

Political activity was assessed in two ways: 1) voting in the 1972 Presidential election and 2) political interest. A measure of political interest was derived from four Likert items including amount of interest in politics, frequency of political discussions, and amount of exposure to political stimuli through the mass media (newspapers, television). The combined items had a coefficient of reliability of .77 (Cronbach's alpha). Interest was selected because it does not require extensive mobility, and evidence suggests that interest in politics is sustained if not increased, in the older age groups.[22]

To measure political efficacy three items with strongly agree-strongly disagree response categories were selected from scales used by Campbell, et al. and Langton (alpha = .70).[23-24] For example, "People like me have no influence on what government does."

Two items were used to indicate advocacy of political intervention by the aged on their own behalf: "Older people should organize to obtain more money from the government" and "More older people should run for political office." These items were rated on a five-point scale ranging from strongly agree to strongly disagree; a low score indicates endorsement of political intervention.

Demographic Characteristics

Organizational participation was measured by the number of voluntary associations in which respondents regularly participated. Women participated in somewhat more organizations than men ($\bar{X}$=2.04 and 1.42 respectively).

Since education has been reported to be the dimension of status that is more central to political participation and remains relatively constant throughout life while income may decline with retirement, the effects of these two aspects of status on political activity are considered separately. Number of years of education was coded into seven categories ranging from less than eight years to graduate education. On the average both men and women had completed some high school but had not obtained a diploma.

Yearly family income was reported in seven categories ranging from less than $999.00 to $22,000.00 or over. The mean income category for men was $3,000 to $5,000 while women averaged between $2,000 and $3,000 per year. Health was rated on a five point scale from very poor (coded 1) to excellent (5).

Measures of Health and Social Services

The three dependent variables were use, projected use, and evaluation of perceived community need for twenty-four health and social services. Services included those administered both in and out of the home, for example, visiting nurse, homemaker-health aide and legal aid services, contact with physicians, reassurance programs, "senior" citizens' organizations and handyman service. Respondents were asked which of the health and social services they had used in the past year, and a use score was calculated by summing the number of "yes" responses across all of the services ($\bar{X}$=3.00). Projected use scores were obtained by asking respondents which of the twenty-four services they anticipated using and by counting the total number of the "yes" responses ($\bar{X}$=15.00).

Perceived community need for services was measured by the importance assigned to the need for provision of additional services for the aged. Each of the twenty-four services was rated on a scale from 1 (low priority for provision of additional services) to 6 (high priority). The ratings which represent perceived needs for provision of more community services were summed across each of the items ($\bar{X}$=84). Inter-item correlations yielded a reliability coefficient of .94 (Cronbach's alpha). The items also form a Guttman scale with a coefficient of reproducibility of .92. This measure of perceived needs treats health, social, and support services as a continuum. Thus, the intent is to provide a profile of personal and social characteristics associated with the overall level of perceived community needs for services for the aged.

RESULTS

To examine the comparability of factors which influence use or projected use, and perceived community need for services, variables were entered in separate stepwise regression analyses for men and women. Zero order correlations, standardized regression coefficients, and multiple correlations for the health and social service variables and the independent variables are presented in Table 1.

Past Use of Services

Demographic characteristics were associated with past use of services, especially among men. Poor health and low income, for example, were indicators of utilization but organizational memberships and education also contributed to use.

Only two life change variables were significant determinants of past use among men; individuals who had experienced an increase in income and a change in the type of activities previously participated in were more likely to have used services. Low political interest and rejection of political intervention by the aged on their own behalf accompanied higher use, while greater political efficacy was also associated with use of more services.

Among women, life change variables and political attitudes were more important in explaining past use than were demographic characteristics. Decremental changes (widowhood, decreased income, declining health) were associated with higher use among women. Further, political attitudes, reflected in low efficacy and rejection of political intervention by the aged were also indicators of greater use of services.

Anticipated Use of Services

Two life change variables were especially salient in determining anticipated use of services. Among men, those who were getting out more than before and those whose health had improved projected greater use of services. Further, high levels of political interest and efficacy were associated with anticipated use, and even though its effect was considerably less than the other political variables, voting was also associated with projected use. Past use, however, was a weak indicator of anticipated use. Among the demographic characteristics, higher income was also associated with greater anticipated use. Although age was inversely related to amount of projected use ($r = -.24$), it had less direct effect than some variables with considerably weaker zero order relationships.

For women, age was the most important indicator of projected use with younger women anticipating greater use. Declining health and income were associated with greater projected use of services while change in marital status was associated with lower expected use. Membership in formal organizations and voting had weaker, although direct effects, on anticipated use. Finally, past use was not associated with plans for future use of services among women.

Perceived Community Needs

Anticipated use of services was combined with the other variables to identify predictors of perceived community need for services. Anticipated use was the most important determinant of perceived needs among both men ($b = .56$) and women ($b = .38$), although it was a considerably stronger indicator among men. Indeed, the variables were much better predictors of perceived need for services among men and accounted for 56 percent of the variance in community needs identified by men compared with only 27 percent of the explained variance in community needs identified by women.

Good health, higher income, and higher educational levels contributed to greater perceived community needs for services among men. Life changes were more important indicators of the needs for community services among men than women. Experiencing change in the type of activities participated in and getting out more than previously were associated with a desire for more services.

Improved health and more positive evaluations of present health were indicators of greater perceived community needs among women. Positive perceptions of old age and higher levels of education were also associated with greater estimated community need for services. Even though the perceptions of needs for services may represent demands which

might evolve in a political context, endorsement of old age intervention was the only aspect of politics which had a substantial direct effect on perceived need for services by women, while efficacy was somewhat important in determining the extent of perceived need among men.

In a final summary analysis, life change, political, and demographic factors were examined as three separate groups to determine and compare the amount of variance which each group alone would explain in each of the three health and social service dependent variables. The three groups of factors were entered in separate blockwise regression analyses for each of the three dimensions of health and social services. This technique indicates the amount of variance any one group of independent variables explains in a dependent variable.

Demographic variables as a group explained more variance (14 percent) in past use of services than any other set of factors among male respondents, while the same variables accounted for only 6 percent of the variance in past use among women (Table 2). Another point of contrast was the greater importance of political factors in explaining past use among women.

Life change factors accounted for one-fifth of the variance in both projected use and perceived community needs for services among male respondents. But, among women life changes were less efficient predictors of anticipated personal use or of estimated community needs while demographic characteristics assumed some importance for both anticipated personal and community needs. Yet, as noted earlier, except for declining health, incremental change rather than disruption and losses mobilized men to anticipate greater personal demands for service and to attribute greater need to the community. Political orientations of men were equally important in explaining variance in both projected personal use and perceived community needs (R^2 = 12 percent). Clearly, the variable set of projected personal use and past use was the best combination of predictors of estimated community needs among both sexes.

SUMMARY AND DISCUSSION

An initial intent was to examine whether or not past use, anticipated use, or perceived community needs for health and social services had comparable correlates and whether factors associated with these aspects of services differed among men and women. This study was exploratory and considered both the independent and group effects of selected life change, political, and demographic variables on responses to health and social services by the aged. Although the sample was somewhat limited and was not purported to be representative of a larger population, some general conclusions were suggested by the data.

Conclusions

1. Individual variables which accounted for the most variance in the three dimensions of health and social services differed somewhat across the three measures of services. There was, for example, more overlap among important indicators of projected use and perceived community needs than with past use. The variables differed considerably in their explanatory usefulness ranging, for example, from 37 percent explained variance in past use to 56 percent explained variance in perceived community needs by men. Further, when the explanatory value of the three groups of independent variables (e.g., life change, political, and demographic) was compared across the three dependent measures of health and social services, life change factors explained substantially more variance in the responses of men than either the political or demographic variables. Among women there was less difference in the overall amount of variance explained by the three sets of independent variables.

2. The independent variables were differentially associated with male and female responses to health and social services in two additional ways. First, the factors which were included were much less useful predictors of the response of women to services. Regardless of the dimension of health and social services which was considered, substantially less variance was accounted for among the female sample; there was, for example, approximately a 30 percent difference in the explained variance in perceived community needs for men compared with that for women. As has been demonstrated in other areas of sociology (e.g. occupational attainment), explanatory models which are most useful in accounting for differences in the activities of men may be considerably less efficient in explaining the behavior of women.

   Second, when significant variables for men and women were comparable, the direction of the relationship varied somewhat by sex. For example, in most instances improved health, increased income, incremental activity, or positive forms of discontinuity experienced by men were associated with expansiveness in plans for future activity or estimated community-wide needs for services. Whereas women seemed to respond to role losses or negative discontinuity (e.g. widowhood, loss of income, loss of declining health) in terms of increased anticipated future use of services or greater estimated community needs.

   Other research has also suggested that men and women may respond differently to role loss in late life.[25] Interrupted work patterns, motherhood, and possibly a late-life career all contrast with the more "continuous" work histories of most men.

In this sample, men and women did not differ in the extent to which they had experienced late life changes in health, income, or organizational activity. Other research has also demonstrated comparability in the occurrence of life transitions among men and women; for example, changes in self-assessed health were similar for men and women.[26] However, women were more likely to have lost a spouse and for them a change in marital status was associated with both past and projected use, but, a comparable change for men did not affect how they regarded health and social services. There is some evidence that marital status may be more salient for women than men.[27] Marital status, for example, was a more important factor in predicting longevity among women; whereas among men, current financial status was an important determinant of longevity. In this research as well, income or change in income was more important in determining the responses of men than those of women.

Similarly, in the present research, status variables which are used to assess location in the social structure and reflect access to opportunity and skills (e.g. education and income) were less likely to be good indicators of responses to services among women. Perhaps these socioeconomic factors are also more important in determining relationships which men have with all types of formal organizations including those which deliver health and social services.

To a degree being disadvantaged (e.g., for men, low income and poor health; for women, decremental change) was associated with greater past use. But factors reflecting both physical and social well-being were somewhat more closely tied with greater anticipated use and perceived collective need. In one sense, individuals who might benefit most from increased community services for the aged were least likely to anticipate use or to identify the existence of need.

But other demographic characteristics were less salient. For example, although the sample varied in age from 65 to 93 years of age, age was the most important factor only in the instance of projected use among women. And in all cases in which age was a significant variable, youth was associated with greater anticipated use and perceived collective need. If age had any effect on past use, its influence was indirect and mediated by other variables.

3. Investigation of the relationship between alienation and utilization of services has just begun.[28] This research suggests that of all of the variables employed to assess the individual political context in which demands for services might be made, perceived efficacy, a mea-

sure of political alienation, was the most useful indicator for both men and women. Further, the political variables were among the most important factors and explained a significant portion of the variance in two of the three analyses which were performed for both men and women.

For the most part, there was little suggestion that endorsement of political intervention by the aged on their own behalf would be a factor in exercising a greater demand for services. In almost all instances rejection, rather than endorsement, of old age political intervention was more salient in the response to health and social services.

4. The intercorrelations among the health and social service measures also deserve comment. As was noted, projected use of services among both men and women was strongly correlated with the extent of perceived community need. Past use, however, was only weakly related to projected use among men ($r = .10$) and although it was somewhat more strongly associated with estimated community needs ($r = .19$), the multivariate analysis showed that past use had a slight, direct effect only on projected use. Further, past use of services was not associated with projected use by women or with their estimation of community needs.

   Earlier it was mentioned that projected use has not been shown to be a good indicator of later use.[29] This research suggests that the reverse may also be true, i.e. previous reported behavior may be a poor indicator of anticipated action with respect to health and social services. Variables based on projected or hypothetical behavior (individual and collective), however, were highly correlated. Future investigations should attempt to determine if actual behavior and projected behavior are indeed quite different dimensions. If they are different, then anticipated use of services as a basis for program planning seems highly questionable. Longitudinal studies of relationships with health and social services throughout the life cycle are needed. These efforts could encompass projected as well as actual use. Finally, future research, using more refined measures of role loss, should consider the extent to which sex-differentiated responses to transitions in late life are reflected in demands for health and social services.

Table 2. Summary of stepwise and multiple regressions for variable sets and past use, projected use, and perceived community need for services for men and women.

Men			Women		
		A. PAST USE			
Variable Set	Multiple Correlation	Explained Variance	Variable Set	Multiple Correlation	Explained Variance
1. Demographic	.380	.145	1. Life Change	.337	.114
2. Life Change	.310	.096	2. Political	.310	.096
3. Political	.202	.041	3. Demographic	.242	.059
		B. PROJECTED USE OF SERVICES			
1. Life Change	.490	.240	1. Demographic	.379	.144
2. Political	.352	.124	2. Life Change	.323	.104
3. Demographic	.279	.078	3. Political	.229	.052
		C. PERCEIVED COMMUNITY NEED FOR SERVICES			
1. Past Use; Projected Use	.551	.303	1. Projected Use	.399	.160
2. Life Change	.445	.198	2. Demographic	.302	.091
3. Demographic	.385	.148	3. Political	.300	.090
4. Political	.346	.119	4. Life Change	.216	.047

Table 1. Zero-order correlations and standardized partial regression coefficients for independent variables, past use, projected use, and perceived community need for services among men and women.

A. PAST USE OF SERVICES

Men				Women			
Rank	Variable	r	b	Rank	Variable	r	b
1	Health	.16	-.37	1	Income Change	-.23	-.33
2	Income	.24	.33	2	Old Age Intervention	-.26	-.28
3	Income Change	-.13	-.35	3	Voting	.04	.23
4	Organizational Participation	.22	.28	4	Political Efficacy	-.14	-.19
5	Education	.13	.26	5	Health Change	-.17	-.18
6	Political Interest	-.06	-.23	6	Marital Status Change	-.16	-.13
7	Activities Previously Enjoyed	-.10	-.22	7	Organizational Participation	.15	.11
8	Political Efficacy	.15	.17				
9	Old Age Intervention	.12	.13				
$R = .611$				$R = .498$			
$R^2 = .373$				$R^2 = .248$			

B. PROJECTED USE OF SERVICES

1	Activity Change	.40	.36	1	Age	-.25	-.26
2	Political Interest	.26	.27	2	Health Change	-.10	-.24
3	Political Efficacy	.05	.22	3	Income Change	-.16	-.18
4	Health Change	.07	.23	4	Marital Status Change	.22	.16
5	Age	-.24	-.19	5	Organizational Participation	.24	.15
6	Past Use	.10	.17	6	Voting	.16	.15
7	Activities Previously Enjoyed	-.28	-.16	7	Activities Previously Enjoyed	.10	.11
8	Income	.12	.13				
9	Voting	.19	.11				
$R = .625$				$R = .466$			
$R^2 = .391$				$R^2 = .218$			

C. PERCEIVED COMMUNITY NEED FOR SERVICES

1	Projected Use	.53	.56	1	Projected Use	.40	.38
2	Health Change	-.18	-.38	2	Education	.06	.16
3	Income	.04	.34	3	Health Change	.15	.15
4	Political Efficacy	.26	.30	4	Old Age Intervention	.14	.14
5	Activities Previously Enjoyed	.25	.25	5	Attitudes Toward Old Age	.07	.13
6	Activity Change	.09	.18	6	Health	.21	.12
7	Education	.28	.13				
8	Age	.25	-.09				
9	Change in Organizational Participation	.13	.09				
$R = .747$				$R = .517$			
$R^2 = .559$				$R^2 = .267$			

NOTES

1. Powers, E. A. and G. L. Bultena, "Correspondence Between Anticipated and Actual Uses of Public Services by the Aged," Social Service Review 48 (June 1974):245-254.

2. Liska, Allen, "Emergent Issues in the Attitude-Behavior Consistency Controversy," American Sociological Review 39 (April 1974):261-272.

3. McKinlay, J. B., "Some Approaches and Problems in the Study of the Use of Services--An Overview," Journal of Health and Social Behavior 13 (June 1972):115-152.

4. Ibid. p. 121.

5. Zola, I. K., "Illness Behavior of the Working: Implications and Recommendations," in A. B. Shostak and W. Gomberg, (Eds.) Blue Collar World (Englewood Cliffs, N.J.: Prentice-Hall, 1964), pp. 350-361.

6. Beattie, S. "Social Services and the Aged," in R. Binstock and E. Shanas, (Eds.) Handbook of Aging and Social Science (New York: Van Nostrand Reinhold, 1976) 354-372.

7. McKinlay, p. 125.

8. Seeman, M. and J. W. Evans, "Alienation and Learning in a Social Setting," American Sociological Review 27 (December 1962):772-782.

9. Ibid.

10. Gray, R. M., J. P. Kesler and P. M. Moody, "Alienation and Immunization Participation," Rocky Mountain Social Science Journal 4 (April 1967):161-168.

11. Bullough, Bonnie, "Poverty, Ethnic Identity, and Preventive Health Care," Journal of Health and Social Behavior 13 (December 1972):347-359.

12. Morris, N. M., M. H. Hatch, and S. S. Chipman, "Alienation as a Deterrent to Well Child Supervision," American Journal of Public Health 56 (November 1966):1874-1882.

13. Nakagawa, H., "Family Health Care Patterns and Anomia," in Bonnie and Vern Bullough, (Eds.) New Directions for Nurses (New York: Springer, 1971).

14. Campbell, A., G. Gurin, and W. E. Miller, The Voter Decides (Evanston, Illinois: Row, Peterson and Company, 1954).

15. Gubrium, Jaber F., "Continuity in Social Support, Political Interest, and Voting in Old Age," The Gerontologist 12, No. 4 (Winter 1972): 421-423.

16. Cutler, Stephen J., "Perceived Prestige Loss and Political Attitudes Among the Aged," The Gerontologist 13, No. 1 (Spring 1973):69-75.

17. Trela, James E., "Age Structure of Voluntary Associations and Political Self-Interest Among the Aged," The Sociological Quarterly 13 (Spring 1972):244-252.

18. Berardo, Felix M., "Survivorship and Social Isolation: The Case of the Aged Widower," The Family Coordinator 19, No. 1 (January 1970):11-25.

19. M.F. Lowenthal, M. Thurnher, and D. Chiriboga, Four Stages of Life (San Francisco: Jossey-Bass, 1975).

20. Gurbium, pp. 421-423.

21. Trela, pp. 244-252.

22. Glenn, Norval and M. Grimes, "Aging, Voting and Political Interest," American Sociological Review 33 (August 1968):563-575.

23. Kenneth P. Langton, Political Socialization (New York: Oxford University Press, 1969).

24. Campbell et al., p. 187.

25. Kline, Chrysee, "The Socialization Process of Women," The Gerontologist 15, No. 6 (December 1975):486-492.

26. Heyman, D.K. and F.C. Jeffers, "Effect of Time Lapse on Consistency of Self-Health and Medical Evaluations of Elderly Persons," Journal of Gerontology 18 (April 1963):160-164.

27. Pfeiffer, Eric, "Survival in Old Age: Physical, Psychological and Social Correlates of Longevity," Journal of the American Geriatrics Society 18 (April 1970):273-285.

28. McKinlay, p. 125.

29. Powers and Bultena, pp. 245-254.